SIXTY-THIRD

ANNUAL MEETING

OF THE

American Institute of Instruction

LECTURES, DISCUSSIONS, AND PROCEEDINGS

Narragansett Pier, R. I., July 5-8, 1892

Published by order of the Board of Directors

OHIO STATE UNIVERSITY

BOSTON
AMERICAN INSTITUTE OF INSTRUCTION
1892

LZ 13
A51
1892

Copyright, 1892,
by the
American Institute of Instruction.

OHIO STATE
UNIVERSITY

Printed by the Republican Press Association,
Concord, N. H.

CONTENTS.

JOURNAL OF PROCEEDINGS..... v to xxxv
ADDRESSES OF WELCOME AND RESPONSE..... vi
DIRECTORS' MEETINGS.....x, xxxv
COMMITTEES..... xiii
CONFERENCES..... xv, xviii, xxix
NECROLOGY..... xx
In Memoriam. Mrs. Margaret A. F. Frost, John Larkin Lincoln, Zuinglius Grover, Noah Porter, Jarvis Cutler Howard, John E. Lovel, Ebenezer Hervey, Henry L. Chase.
RESOLUTIONS..... xxvii
MEMBERS ELECTED..... xxviii
CONSTITUTION AND BY-LAWS..... xxxvi
OFFICERS FOR 1892–3..... xxxix
(See, also, *Committees.*)
LIST OF ACTIVE MEMBERS..... xliii

ADDRESSES AND DISCUSSIONS.

I. THE IMPORTANCE OF ECONOMIC PSYCHOLOGY TO TEACHERS.
By Prof. Simon N. Patten of the University of Pennsylvania..... 1
II. GEOGRAPHICAL ILLUSTRATIONS.
By Prof. William M. Davis of Harvard University. 22
Discussion: Chas. F. King, Boston.
III. ARITHMETIC: WHAT AND HOW.
By Geo. I. Aldrich, Newton, Mass..... 67
Discussion: Zalmon Richards, Washington, D. C.
IV. NEEDED REFORMS IN GRAMMAR SCHOOLS.
By Elmer H. Capen, D. D., President of Tufts College..... 84

131509

V. Grammar School Reforms.
By James A. Page, Boston, Mass..... 100
VI. English in Elementary Schools.
By Miss Ellen Hyde, Framingham, Mass..... 110
Discussion: Mara L. Pratt, M. D., Malden, Mass.
VII. The Three Parts of English Study.
By Samuel Thurber, Boston, Mass..... 132
Discussion: J. W. MacDonald, Stoneham, Mass.
VIII. English Composition in Colleges.
By Prof. Lorenzo Sears of Brown University.... 151
IX. The Development of Literary Taste in College Students.
By Prof. Charles F. Johnson of Trinity College. 174
X. Country Schools.
By Hon. Henry Sabin, Des Moines, Iowa..... 191
Discussion: Geo. H. Martin, Lynn, Mass.
XI. The Relative Educational Value of Extension and Intension.
By Charles Henry Douglas, Keene, N. H..... 211
Discussion: Prof. Simon N. Patten, Philadelphia, Pa.

AMERICAN INSTITUTE OF INSTRUCTION.

SIXTY-THIRD ANNUAL MEETING,

JULY 5, 6, 7, AND 8, 1892.

JOURNAL OF PROCEEDINGS.

FIRST DAY—TUESDAY, July 5.

EVENING SESSION.

The sixty-third annual meeting of the American Institute of Instruction opened in the Casino Theatre, Narragansett Pier, R. I., Tuesday evening, July 5, 1892.

The president, Ray Greene Huling, of New Bedford, Mass., called the Institute to order at 8 : 10 p. m.

Devotional exercises were conducted by Rev. A. B. Carver, of Yonkers, N. Y.

The president then introduced the Schubert Quartette of Boston—Mr. George J. Parker, 1st Tenor; Mr. George W. Want, 2d Tenor; Mr. Arthur B. Hitchcock, 1st Bass; Mr. D. Marks Babcock, 2d Bass—who sang "Comrades in Arms," by A. Adams, and in response to an enthusiastic encore, "Sailor's Song," by Hatton.

After a few pleasing remarks, the president introduced His Excellency, D. Russell Brown, Governor of Rhode Island, and Hon. Thomas B. Stockwell, Commissioner of Education for the same state, who delivered addresses of welcome.

WELCOME.

Gov. Brown, representing the commonwealth, said:

It affords me great pleasure to welcome you to our state, and especially to this part of Rhode Island's beautiful shores, where nature and the hand of man have provided so much that is entertaining and delightful. Let me assure you that our people greet you heartily, and appreciate the honor you confer in accepting this place for your meeting. We believe that you have acted wisely and will not regret your choice.

The cause of education should be very near to every citizen, and it is well that you, the leaders of educational thought, meet at the close of the school year for a comparison of notes and for a free interchange of ideas. Throughout our country the cause of public education is making rapid progress. Here in Rhode Island we have caught the enthusiasm, and have an ever-increasing desire for more general public instruction and the higher education of all, especially in the more practical branches of study, and we are on the up grade all the year around. But I will leave it to our commissioner, Mr. Stockwell, who has served us long and well, to tell you all about this.

In behalf of our state, I gladly welcome you to Rhode Island, and I hope that your visit will prove as pleasant as I feel sure it will be profitable to you and to the cause of education generally.

In behalf of the schools of Rhode Island, Commissioner Stockwell spoke as follows:

I am sure that after the cordial welcome extended to you by His Excellency, Gov. Brown, no words of mine are necessary; but it is, in a sense at least, quite fitting that a word should be

spoken to-night for the teachers of Rhode Island and her various educational interests.

In their behalf, then, and personally, it gives me very great pleasure to extend to you the hand of greeting, and to assure you that you are indeed very welcome to Rhode Island and her plantation.

We are the more glad to receive you within our borders, because you are not strangers. This is, I think, the fifth time you have met in our little state; and from the first meeting held under the direction of those Nestors of the Institute, whose name and fame will never grow dim, down to the present moment, this organization has steadily grown in the estimation and regard of our citizens.

But though you may have often visited the state, this is the first time you have ever been received within the classic precincts of the Narragansett country, the old "South County." No spot in New England has a richer history, and among all of the legends which cluster about her, none are more noted than those which deal with her home life. Indeed, sir, this was the seat of a truly royal hospitality, and he who was once a favored recipient never forgot his experience. It was ever a bright spot in his memory. I am sure I shall only express the feelings of this community, when I say to you, one and all, that we give you a genuine Narragansett welcome.

I think I may be pardoned the statement that I doubt if the Institute has ever met in a place more redolent in its traditions and surroundings with educational and patriotic memories.

The place of Homer's birth still remains unsettled, the location of the first free school in America is a disputed claim, but I question whether any place can claim so long and unbroken a record in behalf of free education for all, without respect to race or condition, as can the town of South Kingston, the ancient Pettaquamscutt. In 1695, Judge Samuel Sewall, one of the proprietors of the Pettaquamscutt purchase, placed in the hands of trustees a large lot of land, the profits or income of which was to go "towards the procuring, settling, supporting, and maintaining at all times forever hereafter a learned, sober, orthodox person to instruct the children and youth of Pettaquamscutt, English as well Indian, to read and write the English language and the rules of grammar." Here was one of the first, if not the very first recog-

nition of the claims of *every* child, without distinction of race, color, or condition, to free education made in this country; and it continues in full force to this day, having maintained its useful career unbroken; for it was only the past week that I read in the annual returns of the school committee of South Kingstown, among the "receipts" for the year, that of the annual income of the Sewall Fund. For more than a century the school looked down upon this very spot from the heights of Tower Hill, immediately behind us, and when the glory of that locality departed, the school was removed to Kingston Hill, then denominated "Little Rest," where it rests to this day.

To the north of us, overlooking the bay and charming the eye with the picturesqueness of its view, lies McSparran Hill, the site of the first church erected in this country under the auspices of the Church of England. There lived and labored the worthy Dr. McSparran, the friend and companion of the noted Berkeley, the foremost scholar of his day. This church, a most interesting relic of the past, may be seen in the village of Wickford, to which it was removed many years ago.

A little farther up the bay, but still within the limits of the old "South County," may be found another historic spot, the birthplace of one of the geniuses of the eighteenth century, the American peer of Sir Joshua Reynolds, Gilbert Stuart, whose portraits of Washington have given both artist and subject a world-wide renown. The old "Snuff Mill" still stands where it did in Stuart's days, but little changed, and will well repay a pilgrimage to the spot.

Time would fail me were I to recall all of the places in this neighborhood that are associated with the notable deeds of the past, but I cannot fo bear to allude to the fact that out from this town came the leader in the contest for better schools which gave to Rhode Island her present system of public schools. The name of Wilkins Updike deserves to be held in everlasting remembrance by all friends of popular education, for the whole-hearted and chivalric devotion with which he threw himself into the conflict, and which contributed, in no small degree, to the final success.

It is, then, friends, to these scenes and associations, as well as to the more apparent and specific attractions of the place and hour, that we welcome you, confident that the days you spend here will not only refresh and invigorate the body, but that you

will draw inspiration and power from hill and shore for the better discharge of duty and the richer fulfilment of the opportunities that God shall place in your hands in the time to come.

Again, Mr. President, in the name and in behalf of the teachers of Rhode Island, I bid you welcome, with the hope that your stay may be so agreeable that your steps will ere long turn again involuntarily to the shores of the *only* Narragansett.

RESPONSE.

President Huling said in reply:

In behalf of the members of the American Institute of Instruction, I am happy to respond to Your Excellency's felicitous welcome and to the cordial greeting voiced by Commissioner Stockwell, assuring you of our deep appreciation of the kindly feeling which prompts your words. The Institute is no stranger to Rhode Island; it has been our guest more than once before, and it is ever glad to come here. To some of us, indeed, there is an especial pleasure in the coming; for a visit to Rhode Island is a visit home.

We come in goodly numbers, but not as an invading force. Mr. Stockwell might have mentioned an occasion in former days when a band of New Englanders came to the Old South County on a different errand. They landed at Wickford, you remember, and, marching through the wintry snows on your hills, in the swamp a few miles west from here they found the native Rhode Islanders waiting to give them even a warmer reception than your words presage to us. But *we* come rejoicing to receive your kindness and hoping that from our stay something of rich advantage may be yours, as well as ours.

Your Commissioner of Education found many honors by which to emphasize the historical richness of the region in which we are now entertained. As an old Rhode Islander, I must confess my surprise that he omitted the one chief glory of this hospitable country. For unaccountably he neglected to mention that here was the original home of that culinary delight, the Rhode Island Johnnycake, and of Phyllis, that marvellous cook whom "Shepherd Tom" never ceased to praise.

Yes; we are glad to be here, where the broad Atlantic sends its cool breezes to temper the July heats, and where human skill has vied with nature to make the days of summer restful, healthful, and delightful. And we trust that we may be able to carry hence into the busy activities of the coming year the helpful influences with which we are now surrounded.

The President then called upon the Schubert Quartette, who sang "King Witlaf's Drinking Horn," by Hatton, and on recall, "Annie Laurie," arranged by Buck.

The address of the evening was delivered by Professor Simon N. Patten, of the University of Pennsylvania, on "THE ECONOMICS OF EDUCATION."

[For all addresses and the lengthier speeches in debate, the reader is referred to pages of this volume following the Journal of Proceedings and its appendixes. The two parts of the volume are distinguished by difference in style of paging.]

After the President had announced that a meeting of the Directors would be held in front of the platform immediately after adjournment, the Schubert Quartette sang "The Chafer and the Flower," by Zöllner.

DIRECTORS' MEETING.

At the meeting held directly after the adjournment of the Institute, the directors voted that the annual assessment be one dollar for each member; also, that the volume of this year's proceedings be sent to any member asking the treasurer therefor, and paying him ten cents for postage thereon.

After considerable discussion, it was voted, that the

assessment of one dollar levied on each active member, present or absent, as prescribed by the Constitution, be that for this meeting at Narragansett Pier, and that the treasurer be instructed to send out his bills accordingly. It was also voted that the financial year extend from the opening day of one annual meeting to the opening day of the next annual meeting.

SECOND DAY—WEDNESDAY, July 6.

MORNING SESSION.

The meeting of the Institute was called to order by President Huling, at 9 : 30 a. m.

Devotional exercises were conducted by Rev. J. W. Fobes, of Peace Dale, R. I.

The Schubert Quartette were again called upon, and sang, "Tar's Song," by Hatton, and "Serenade," by Conradi.

The President then introduced William M. Davis, Professor of Physical Geography in Harvard University, who gave an address, illustrated by maps, charts, and blackboard drawings, upon "GEOGRAPHICAL ILLUSTRATIONS."

The discussion was opened by Charles F. King, master of the Dearborn School, Boston, and continued by David W. Hoyt, principal of High School, Providence, R. I.

Mr. Hoyt said that he desired to protest against a location of the Narragansett river by a Harvard professor where it would give to Connecticut most of the territory of Rhode Island.

Prof. Davis has referred to the difference in the action of the Atlantic ocean and of the Chesapeake bay upon the coast lines of the peninsula of Maryland. The same effect may be observed by comparing the action of the waves of the Atlantic in forming beaches, ponds, marshes, and swamps on the southern coast of Rhode Island, thus straightening the coast line, with the action of Long Island Sound upon the southern coast of Connecticut; or, again, by examining the southern and the northern coast lines of Long Island itself. Scott's pond, in this state, which stands more than twenty feet above Valley Falls pond, only a short distance away, and the relations of these to the Blackstone and Moshassuck rivers, furnish a fine illustration of the effects of glacial deposits in modifying and obstructing the old drainage, thus giving not only locations for manufacturing industries, but also opportunities for litigation.

Mr. J. C. Greenough, of Westfield, Mass., remarked that Prof. Davis said nothing of philosophy, but that he proceeded upon philosophical lines. His exercise, on account of its methods, is invaluable as an object-lesson on the application of psychology to the art of teaching.

Mr. A. G. Boyden, of Bridgewater, Mass., said that there is no doubt about the ability of grammar-school pupils to receive profitably the kind of objective instruction illustrated by Prof. Davis. The difficulty lies in the fact that the teachers are not ready to give it. The public will be ready to furnish the means as soon as teachers demonstrate the value of illustrations.

Mr. Daniel W. Jones, of Boston, emphasized the importance of the power which any teacher can soon acquire in the use of the crayon, as Professor Davis has so well shown.

Brief remarks were also made by Mr. J. S. Barrell, of Cambridge, Mass., and Mr. A. L. Goodrich, of Salem, Mass.

On motion of Mr. George E. Church, of Providence, the president was authorized to appoint the usual committees. President Huling appointed the following:

Committee on Nominations.

H. C. Hardon.	C. C. Rounds.
W. J. Corthell.	Ellen Hyde.
C. L. Ames.	Thomas B. Stockwell.

Committee on Resolutions.

George E. Church.	Lorenzo Sears.
Robert P. Keep.	A. L. Goodrich.
William F. Bradbury.	Charles Henry Douglas.

Intermission of five minutes.

President Huling then called the meeting to order, and introduced George I. Aldrich, Superintendent of Schools, Newton, Mass., who read a paper on "ARITHMETIC: WHAT AND HOW."

The discussion was opened by Zalmon Richards, of Washington, D. C.

President H. T. Fuller, of the Worcester Polytechnic Institute, in response to the call for volunteers, said that we used to teach more arithmetic pure and simple, and less of what was often set for the pupil in the text-book, but which was not really a necessary part of the subject. First, it was a waste of time to oblige

the grammar-school pupil to solve puzzles and catch-problems. Such problems were characteristic of some text-books, as, for example, Greenleaf's National Arithmetic. Enigmas might be good for fun, but they should not constitute any part of mathematical training. Secondly, there is in some grammar schools a due allotment of time for the solution of complex problems in mensuration involving the principles of geometry. Let us teach form and geometrical principles, but not solid geometry under the guise of arithmetic when the whole thing is to be a matter of rote.

Mr. William F. Bradbury, of the Cambridge Latin School, said that every man must know arithmetic, and must use it. It is the failures in life which show the men who cannot do arithmetic. A pupil who cannot successfully study physics or Greek is usually deficient in his arithmetical training.

Professor Davis remarked that the success in life to which reference has been made seems to be measured in millions. It may well be questioned whether this is the true measure of success.

Mr. George H. Martin objected to the criticism that much that is taught as arithmetic is really geometry. There is no more geometry in finding the content of the frustum of a pyramid than in finding the area of a rectangle. Computing discount is simply an application of pure arithmetic. It is merely a question of the extent to which these applications should be carried.

Mr. A. G. Boyden said that there is ground for the complaint that pupils are unable to apply the processes

of arithmetic to the problems of practical life. We want knowledge of form and the power to apply that knowledge. Give pupils proper implements, and teach them to measure accurately, and to calculate areas and contents.

Mr. J. S. Barrell stated that the complaints that he had met had not been that pupils cannot apply principles, but that they cannot make accurate computations.

Mr. Cogswell and Mr. Hoyt spoke in defence of the much abused Greenleaf's National Arithmetic.

The Institute then adjourned until evening.

SECOND DAY—WEDNESDAY, July 6.

CONFERENCES.

A conference on "PROMOTION IN GRADED SCHOOLS" was held in the parlor of the Rockingham at 3:15 p. m. Chairman, Horace S. Tarbell, Superintendent of Schools, Providence, R. I.

A conference on the "RELATIONS OF COLLEGES AND SECONDARY SCHOOLS" was held in the parlor of Hotel Berwick at 4:30 p. m. Chairman, Robert P. Keep, Ph. D., Principal of the Norwich Free Academy.

EVENING SESSION.

President Huling called the meeting to order at 7:50 p. m., and again presented the Schubert Quartette, who sang "The Cheerful Wanderer," by Mendelssohn, and "Proposal," by Osgood.

The President then introduced Rev. Elmer H.

Capen, D. D., President of Tufts College, who read a paper on "GRAMMAR SCHOOL REFORMS."

A second paper on the same subject was read by Mr. James A. Page, Master of the Dwight School, Boston.

The Schubert Quartette sang "The Legend of the Rhine," by Smart, and the Institute adjourned until Thursday morning.

THIRD DAY—THURSDAY, July 7.

MORNING SESSION.

The session was called to order by President Huling, at 9:25 a. m.

Devotional exercises were conducted by Rev. E. H. Capen, D. D., President of Tufts College.

The President announced that a recital, complimentary to the subscribers to the Casino, would be given by the Schubert Quartette, Friday afternoon, at 4:30, to which all were invited.

The Institute was again entertained by the Schubert Quartette, the selections being "I'm a Pilgrim," by Marston, and "The Miller's Song," by Zöllner.

The President then introduced Miss Ellen Hyde, Principal of the State Normal School, Framingham, Mass., who read a paper on "ENGLISH IN ELEMENTARY SCHOOLS."

The discussion of this paper was opened by Mara L. Pratt, M. D., of Malden, Mass.

After an intermission of five minutes, the President introduced Samuel Thurber, Master in the Girls' High

School, Boston, who read a paper on "THE THREE PARTS OF ENGLISH STUDY,—THEIR CORRELATION IN SECONDARY TEACHING."

At the close of Mr. Thurber's paper, the President called to the chair Vice-President James A. Page, of Boston.

On assuming the chair, Mr. Page spoke briefly on the value of English study, and in the course of his remarks said that Sir Thomas Fowell Buxton wrote to his grandson on the latter's seventh birthday: "I made a speech to-night in the House of Commons, and by all odds the best part of it was a little bit I committed to memory when I was a small boy seven years of age, like you."

The discussion of Mr. Thurber's paper was opened by Mr. J. W. MacDonald, Principal of High School, Stoneham, Mass.

This discussion was continued by Dr. E. H. Capen, who argued that most pupils fail to express their ideas correctly, however readily they get at facts. Only two or three of thirty English papers recently presented by candidates for admission to a certain college were really creditable.

Mr. Barrell, of Cambridge, asked if the results in English would not be satisfactory provided as much time were given it as is now given to Latin.

Mr. Edwin Ginn, of Boston, expressed the opinion that the spelling book is responsible for many errors concerning the meaning of words.

Mr. Henry C. Hardon, of Boston, said that he was convinced that a year of school life would be saved if English words were spelled by sound after the manner

of the German. This speaker also advocated the metric system.

The discussion was continued by Mr. A. E. Winship, of Boston, Mr. L. H. Meader, of Providence, and Dr. Geo. A. Williams, of Saxton's River, Vt., until 12 : 10 p. m., when the Institute adjourned until evening.

THIRD DAY—THURSDAY, July 7.

CONFERENCES.

The conferences, begun on Wednesday, were continued at the same time and places recorded in the journal for July 6. Reports of these conferences will be found in the journal for Friday, July 8.

EVENING SESSION.

President Huling called to order at 8 : 10 p. m., and the exercises were opened by songs by the Schubert Quartette, the selections being "Loyal Song," by Kücken, and "From a By-gone Day"—a folk-song.

The first speaker of the evening was Rev. Lorenzo Sears, Associate Professor of Rhetoric in Brown University, who read a paper on "ENGLISH COMPOSITION IN COLLEGES."

The second paper was by Charles F. Johnson, Professor of English Literature in Trinity College, on "THE DEVELOPMENT OF LITERARY TASTE IN COLLEGE STUDENTS."

President Huling announced the total attendance upon this meeting to be 562, as follows :

Maine	4
New Hampshire	23
Vermont	14
Massachusetts	279
Rhode Island	137
Connecticut	51
Elsewhere	54

The exercises of the evening closed with a song by the Schubert Quartette, the selection being "Reveries" by Storch, and the Institute adjourned until Friday morning.

FOURTH DAY—Friday, July 8.

MORNING SESSION.

President Huling called the Institute to order at 9:20 a. m., and the session was opened with devotional exercises conducted by Rev. Wm. M. Thayer, of Franklin, Mass.

The Schubert Quartette then sang "The Breaking Waves Dashed High," by Brown.

The President again gave notice of the recital to be given by the Schubert Quartette, in the Casino, at 4:30 p. m., and extended a cordial invitation to all members and friends of the Institute to be present.

In the absence of the chairman, Mr. David N. Camp of New Britain, Conn., the report of the Committee on Necrology was read by Mr. James S. Barrell, of Cambridge, Mass.

On motion of Mr. A. D. Small, the Committee was directed to add obituary notices of Ebenezer Hervey.

of New Bedford, Mass., and Henry L. Chase of Lynn, Mass.

The report was unanimously adopted by a rising vote, and while all remained standing the Schubert Quartette gave appropriate expression to the feelings inspired by the solemn hour by singing in a touching manner, "Passing out of the Shadow."

The report adopted is as follows:—

REPORT OF THE COMMITTEE ON NECROLOGY.

The report on Necrology includes but few names, but those are of persons who were ripe in years, and who had rendered long continued service in the cause of education. All had passed "three score years and ten," and one had reached his ninety-eighth year.

Mrs. Margaret F. A. Frost.

Mrs. Margaret Fulton Alcorn Frost was born of Protestant parents in the town of Groton Lane, near Londonderry, Ireland. Her mother was of the same family as Robert Fulton, who applied steam to moving boats. Her father, being an Irish patriot, suffered from conflict with the authorities, having his property confiscated; and the mother and children came to this country, the daughter, afterward Mrs. Frost, a mere child. She early evinced talent, and was favored in having a faithful teacher who gave her the advantage of a classical course of instruction. To this gentleman, Professor Kirby of Stonington, Mrs. Frost felt that she owed much gratitude for the rare opportunities given her. She was afterwards a student in the Westerly Academy (R. I.), and upon the resignation of the principal, Rev. Samuel Hazard, was appointed his successor. She continued in this position for more than seven years, conducting the school with acknowledged ability. Ill health caused her to resign, but when better she was again invited to the position which she filled very acceptably, until, her health again failing, certain leading families engaged her to take their children under her special care. She continued this work until her daughter, Mrs. Mary Frost Ormsby, opened a school in

New York city, when Mrs. Frost left Westerly and became joint principal of Seabury Seminary. Here she was a co-worker with her daughter until about a month and a half before her death which took place July 30, 1891.

Her life as a teacher extended from 1831 to 1891, or sixty years, with the exception of a few years' interruption of her married life. And to this long period might properly be added a period of teaching in her girlhood when she worked with a missionary spirit, in a country town, trying to break down the ignorance and dispel the narrow views of education there prevalent. She taught grammar orally and without compensation, evenings, to young men and young women who were pupils in the district school where grammar was not allowed to be taught, and often furnished books gratis to indigent students.

She was an ardent temperance advocate, a member of the Peace society, contributing money and influence for the advancement of these and other charitable objects. She was a consistent member of the Episcopal church, ever ready to engage in its ministries until her last painful illness which she bore without a murmur.

Prof. John Larkin Lincoln, LL. D.

Prof. John Larkin Lincoln, son of Ensign and Olive Larkin Lincoln, was born in Boston, February 23, 1817. He became a member of the Boston Latin School at nine years of age, and completed the five years' course in four years. He then studied at the high school a year, and passed another year at the Latin school where he was monitor of the upper room and was graduated the valedictorian of his class. At the age of fifteen he entered Brown University and immediately after graduation was appointed a tutor in Columbia College, Washington. In the fall of 1837 he entered the Newton Theological Institution where he remained two years, and was then appointed a tutor in Brown University. He was eminently successful in this position, winning the love and confidence of his associates and of his pupils. He was advised by President Wayland to make teaching his profession for life, and in 1841 he went to Europe to pursue his studies at the German Universities. He returned in 1844, and in the autumn of that year entered upon his duties as assistant pro-

fessor of Latin in Brown University. The next year he was appointed professor of the Latin Language and Literature and held the position forty-six years, or until his death, which occurred October 17, 1891.

Prof. Lincoln was an inspiring teacher and a personal friend of the students. His own love for accurate scholarship was impressed upon the minds of his pupils and its influence is seen in their work. In his lecture before this Association[1] in 1879, he says: "A great privilege it is to nurture the youth of the scholar, and set him forward in the beginnings of a noble career in letters."

He was in the highest sense a true scholar and successful educator. While fond of athletic sports, his true character was best seen in his religious activities. For nearly a quarter of a century he was deacon of the First Baptist church in Providence. He had been superintendent of the Sunday-school, president of the Baptist Social Union, and in many other ways been identified with the best interests of the church, the college, and of society. He was married July 29, 1846, to Laura Elvira Pearce, who, with four sons and one daughter, survives him.

Prof. Zuinglius Grover.

One of the older members of the Institute, both in age and in date of membership, was Prof. Zuinglius Grover, son of William and Rachel (Lane) Grover. He was born in Mansfield, Mass., January 17, 1812. His preparatory studies were pursued at Phillips Academy, Andover, and elsewhere, in intervals of teaching. He passed one year at Dartmouth College, and in 1839 entered the Sophomore class of Brown University. After graduating he engaged in teaching, first at Attleboro', Mass., then at Nashua, N. H., and in 1845 at Providence, R. I., where for twelve years he had charge of the Prospect grammar school. He became a member of the American Institute of Instruction in 1836, before entering college. In 1857 he removed to Chicago. At this place, as principal of the Dearborn Seminary, he became one of the most widely known educators of that part of our country. He was universally esteemed. "He was essentially an unselfish man,"

[1] The American Institute of Instruction.

modest, of delicate sensibilities, refined, but strong in moral convictions. He cheerfully engaged in work for others, and his monument is the characters which he helped to form. He was twice married, but a widower at the time of his death. He died at his apartments in Dearborn Seminary, Chicago, December 8, 1891. An only son, Thomas W. Grover, teacher in the University School of Chicago, survives him.

Noah Porter, D. D., LL. D.

One of the most marked and influential of our nation's educators to fall from the ranks the past year was ex-President Noah Porter of Yale University. He was the son of Rev. Dr. Noah Porter, and was born in Farmington, Conn., December 14, 1811. He graduated at Yale in 1830, and for two years afterward was Rector of the Hopkins grammar school in New Haven. He became a tutor in Yale College in 1833, at the same time beginning study in the Divinity school. After completing his theological course, he was ordained, April 27, 1836, pastor of the Congregational church at New Milford, Conn. He resigned from this large parish, December 31, 1842, and was installed pastor of the South church, Springfield, Mass., January 12, 1843. From his college days, his time had been devoted to philosophical studies, and in 1846 he was elected to the newly established professorship of Moral Philosophy and Metaphysics at Yale. He was dismissed from the pastorate at Springfield in January, 1847, and entered immediately on the duties of his professorship. He filled this chair with power and distinction for forty-five years, or until the close of his life. He was also President of the University from 1871 to 1886.

Thus for half a century as student, tutor, professor, and president, he was one of the brotherhood of Yale, a teacher and leader esteemed and beloved. From the outset he was a power in the University life. He was an example of an earnest, clear-minded, enthusiastic scholar, liberal in his views and progressive in his plans and purposes. Ever diligent in study, he stimulated others by his varied learning and free and liberal spirit. The thousands who looked up to him as a teacher trusted him as a friend and loved him as a father and brother. He was an active defender of the Christian faith, and his personal life was ever a power for

good. He was a prolific writer. For more than a score of years he was editor-in-chief of Webster's dictionaries. Among his many books the best known are probably "The Human Intellect," "The American Colleges and the American Public," "Books and Reading," "Elements of Intellectual Science," "Elements of Moral Science," and "Kant's Ethics." He received the degree of Doctor of Divinity from the University of the City of New York, and that of Doctor of Laws from the Western Reserve College, from Trinity College, and from the University of Edinburgh. He was regent of the Smithsonian Institution.

He became a member of the American Institute of Instruction in 1875, and delivered a lecture before it on "Classical Study and Instruction." He was married in 1836 to Mary Taylor, the daughter of Rev. Dr. Taylor. His wife died April 14, 1888, and Dr. Porter died at New Haven, March 4, 1892.

Jarvis Cutler Howard.

Jarvis Cutler Howard, son of Benjamin Howard, was born in Strafford, Conn., April 26, 1808. He entered Yale College in 1829. After graduation, he took charge of a school in Warren, Conn., where he taught with success most of the time until 1854. He then taught in Sharon a year, and next in Hartford until 1857, when he was appointed principal of the high school at Meriden, Conn., where he continued to labor until the fall of 1864, when he retired from teaching on account of failing health. He was for several years in the insurance business.

He became a member of this Institute in 1858, and attended its meetings a few years with pleasure and profit. He married, April 18, 1836, Sophia A. Reynolds, who died February 22, 1862. He next married, December 5, 1863, Mrs. Susan N. Conklin. He had by his first marriage six children, one of whom died in infancy. Mr. Howard died at West Hartford, Conn., March 21, 1892.

John E. Lovell.

John E. Lovell, the son of John E. and Elizabeth Epee Lovell, was born in Colne, Lancaster county, England, April 23, 1795. He attended a boarding-school at St. Ives, and early in life became tutor in the family of the Duke of Bedford. While in this position he became acquainted with Joseph Lancaster, the Quaker,

whose system of education was attracting general attention, and who was for a time at the head of the royal free school at Borough Road, London.

Mr. Lovell became a favorite of Lancaster, and after teaching in schools in London and Woburn was induced to come to the United States. He taught in Philadelphia, at New Haven, and then in Mt. Pleasant Institute, at Amherst, Mass., where Henry Ward Beecher and Archbishop Bailey were among his pupils.

In 1830 he was persuaded to return to New Haven and take control of the Lancasterian school. Here he was able to carry out more fully the ideas and plans of Lancaster, and this school became one of the most noted of its kind in America, and while under Mr. Lovell's care was perhaps the most successful. Among his scholars at New Haven were Ex-Governor H. B. Harrison and J. E. English, Ex-Mayor Henry Lewis, Professor George Day, Professor Benjamin Silliman, Professor E. S. Dana, and others, distinguished in the professions or in official stations. Mr. Lovell was a successful organizer and disciplinarian, and in his teaching impressed his pupils with the importance of truth, virtue, and patriotism.

He ever frowned upon duplicity and selfishness, and inculcated a regard for what was honorable and just, and imbued his students with a spirit of self-sacrifice and regard for the interests of others. He was a successful teacher of elocution, and was the author and compiler of several books as aids to teachers and students. He became a member of the American Institute of Instruction in 1853, and attended its annual meetings, when practicable, with much interest.

His first wife, Miss Henrietta Fletcher, died in 1835. His second wife, Miss Minerva Camp, died in 1867. Mr. Lovell died at the residence of his daughter, Mrs. F. L. White, in Milwaukee, May 3, 1892.

Ebenezer Hervey.

Ebenezer Hervey died at his home in New Bedford, June 11, 1892. He was born in Berkley, November 4, 1804. He received his education at the town school, Berkley, and Bristol Academy, Taunton, and in early life commenced teaching, which profession he followed for forty years. In 1836 he went to New

Bedford to take charge of the Sixth Street school. Then followed the charge of Linden Street, Grove, and Middle, a private school, and the Parker Street. He was deeply interested in all educational matters. He was for sixteen years one of the vice-presidents of the American Institute of Instruction. After resigning his trust as teacher, he served one year as a member of the Common Council, and six years as a member of the school committee. From his youth to old age he believed in the principle and practice of total abstinence from the use of all intoxicating drinks. When but a youth he united with the Congregational church in Berkley, and when he decided to make New Bedford his home, he transferred his membership to the North Congregational church, of which he has since been an honored and valued member.

Henry Lawrence Chase.

Henry Lawrence Chase was born in Leominster, Mass., September 7, 1825. With no school advantages beyond those afforded by the small towns fifty years ago, he felt impelled to make the best of his time for mental culture, during his spare hours as an apprentice to the trade of carpentry. At the age of eighteen, he fitted himself for teaching, and began his service in the rural schools, continuing in these and in the schools of his native town for nearly twelve years. For the succeeding ten years he taught at Malden, Mass., and in 1866 accepted a call to the principalship of the Whiting grammar school, Lynn, Mass., which he retained until his death, February 25, 1892.

The fact that he was an excellent teacher is attested not merely by his long service at Lynn and the current testimony of successive school-boards, but by the hosts of patrons and pupils who honor his memory. Aside from the duties of his profession, he was a man of exceptionally varied information, as well as of high character and practical judgment. In short, he was a sterling, thriving man, of strong personality, and deservedly popular and appreciated wherever known.

The President then introduced Hon. Henry Sabin, recently State Superintendent of Schools for Iowa, who read a paper on "Country Schools."

The discussion of this paper was opened by Mr. George H. Martin, Supervisor of the Boston public schools.

After an intermission of five minutes, the second paper of the morning was presented by Mr. Charles Henry Douglas, Superintendent of Schools at Keene, N. H., on "THE RELATIVE EDUCATIONAL VALUE OF EXTENSION AND INTENSION."

Mr. Henry C. Hardon, of Boston, Chairman of the Committee on Nominations, read the list of officers for 1892–'93. Mr. Hardon was directed, by unanimous vote of the Institute, to cast one ballot bearing the names presented. The ballot was cast and the President declared the officers nominated duly elected.

[The list of officers of the Institute, with the Constitution and a list of active members, will be found in the pages following this "Journal of Proceedings," and preceding the addresses.]

In the absence of the chairman, Mr. George E. Church, of Providence, R. I., the report of the Committee on Resolutions was presented by Mr. William F. Bradbury, of Cambridge. After remarks by several gentlemen highly complimentary to the Schubert Quartette, the following resolutions were unanimously adopted:

Resolved, That we cordially endorse the proposition to hold, in connection with the World's Columbian Exposition, in the month of July or August, 1893, a series of Educational Congresses, in which educational workers from the entire civilized world shall be participants, and that we pledge to those who may have the duty of making arrangements for these assemblies the hearty coöperation of the American Institute of Instruction.

Resolved, That we desire to record our appreciation of the valuable service which the United States Bureau of Education is rendering to the educational interests of our land through the admirably planned and exceedingly helpful circulars of information periodically issued from that source, through the system of loans of rare foreign documents otherwise almost inaccessible, and especially through the many stimulating influences resulting from the wise and philosophical management on the part of the eminent Commissioner of Education, Dr. William T. Harris.

Resolved, That the thanks of the American Institute of Instruction are due, and are hereby tendered, to the several railroads that have afforded liberal reduction in rates of fare to members; to the proprietors of the several hotels and boarding-houses in Narragansett Pier for personal courtesies and favorable terms; to the local committee which has made such ample provision for our meeting; to the corporation of the Casino, for the free use of its spacious and convenient building and grounds; to the several speakers for their able and interesting addresses, and to the Schubert Quartette of Boston—Mr. George J. Parker, 1st Tenor; Mr. George W. Want, 2d Tenor; Mr. Arthur B. Hitchcock, 1st Bass; Mr. D. Marks Babcock, 2d Bass—for the repeated contributions which they have made to our enjoyment.

Resolved, That we desire to express our high appreciation of the efficient services of the Executive Officers who have had this meeting in charge, and to acknowledge our special obligation to the President, the Secretary, and the Treasurer, who have freely given to the affairs of the Institute an amount of time and patient labor which can neither be estimated nor adequately rewarded.

GEO. E. CHURCH,
ROBERT P. KEEP,
WM. F. BRADBURY,
LORENZO SEARS,
A. L. GOODRICH,
CHAS. HENRY DOUGLAS.

Mr. M. Grant Daniell, chairman of the Committee on Membership, reported a list of candidates for active membership. The report was adopted, and

the candidates duly elected. Their names appear in the full list.

The Institute then adjourned until evening.

FOURTH DAY—FRIDAY, July 8.

EVENING SESSION.

The Institute was called to order by the President at 8 p. m., and the exercises were again opened by songs by the Schubert Quartette, the selection being "Strike, Strike the Lyre," by Coake.

The President then introduced Rev. T. C. Pease, of Malden, Mass., who gave an interesting address on "THE HISTORY OF THE ALPHABET."

Folk song, "Ring and Rose," by the Schubert Quartette.

In the absence of the chairman, Dr. Robert P. Keep, the following report of the Conference on the "RELATIONS OF COLLEGES AND SECONDARY SCHOOLS" was presented by Mr. M. Grant Daniell, of Boston:

REPORT.

Two sessions were held, each of which was well attended. The main topic taken up at the first session was the operation of the certificate system. Some ten members of the Institute participated in the discussion, which was animated and instructive.

The steady extension of the certificate system was clearly brought out, and the reasons for the numerous details, called for in the certificates, often burdensome to those who fill them out, were clearly set forth. The sense of the meeting was on the whole favorable to the operation and extension of the system of admission by certificate.

The main topic of the second session of the conference was the

Teaching of Pedagogy. It was pointed out that existing normal schools, though discharging admirably their work of training teachers for primary and grammar work, cannot be expected to attract the college graduate, who must, therefore, if he receive any training for teaching, obtain it from a college. The Pedagogical courses, more or less extended, of Harvard, Yale, Wellesley, and of other colleges, were therefor noted with interest, and the hope was expressed that the recognition by the colleges of the importance of teaching to students the art of pedagogy would bear fruit, also, in a more general practice by college professors of the principles of that art. The need in New England of a central school of higher pedagogy designed especially for graduates of colleges was considered, and the efforts which have been made to establish such a state school in Massachusetts were recalled.

ROBERT P. KEEP, *Chairman.*

In the absence of the chairman, Mr. H. S. Tarbell, the report of the Conference on "PROMOTIONS IN GRADED SCHOOLS," was presented by Mr. J. Milton Hall, of Providence.

REPORT.

At the first conference the questions involved were discussed with much interest, and the practice in many places was quite fully explained. No attempt was made to reach any definite conclusion, but the general question was fully presented. At the second session the question of promotion was considered in accordance with the following outline:

1. Should promotions be made upon (a) examinations; (b) several examinations; (c) daily record; (d) teacher's estimate; (e) supervisor's estimate; (f) some combination of those?

2. Should the work that has been done or the work that is to be done determine the promotion?

3. How far should effort and faithfulness or misconduct enter as elements?

4. Should pupils be promoted who do well in most subjects but fail in one or two subjects?

5. Should promotions of individual pupils be made at other than the regular times? If so, under what regulations?

6. Should all pupils in the same room and grade take the same studies and receive promotion on the same standard?

7. What evils connected with promotions are to be especially avoided and by what means?

Upon a consideration of the various plans indicated in topic 1, the vote stood as follows:

In favor of promotion upon a single examination at the end of the grade work, none; in favor of promotions depending upon the average of several examinations, none; upon the pupil's daily record, none; upon the teacher's estimate, none; upon the supervisor's estimate, none; upon some combination of these plans, all.

The various combinations suggested were: (a) The teacher's estimate and one final examination. This was unanimously rejected. (b) The estimate of the teacher, combined with the result of several examinations. Two votes were given in favor of this mode. (c) A combination of the teacher's and supervisor's estimate. Six favored this plan. (d) The estimate of the teacher and the supervisor, supplemented by several examinations, both oral and written, at different times. This method was almost unanimously approved.

During the session an expression of opinion in regard to the keeping of daily records in schools below the high school was called for, and received the approval of three persons. In regard to the keeping of such records in the high schools, two were found to favor the plan.

Upon the question, "Should the work that has been done, or the work that is to be done, determine promotion?" the opinion was very generally expressed that both elements should be considered. None, however, advocated the promotion of pupils evidently unable to do advanced work, except that pupils who have been twice over the work of a grade should be promoted without reference to attainment, provided attendance and effort had been satisfactory. The faithful pupil who is always relatively mature in years ought usually to be promoted, even though somewhat below the required standard. No pupil should be deprived of promotion as a penalty for misconduct or irregular attendance.

Upon the question, "Should pupils be promoted who do well in most subjects, but fail in one or two subjects?" the prevalent

thought seemed to be that the grade and the subject should be considered. For illustration, in the primary grades a pupil failing in reading should be promoted only under unusual conditions. In the grammar grades a failure upon both arithmetic and language should debar from promotion, but a good general average, even with a failure upon one study or any two studies, except arithmetic and language, should usually entitle the pupil to promotion. In high school grades pupils who fail upon a single subject should, as a rule, be advanced and allowed to make up the deficiency. The promotion of capable pupils at other than the regular times was earnestly recommended. When such promotions are to be made, there should be a conference between the teacher, principal, and parent; and age, physical condition, mental ability, and home surroundings should all be considered.

The meetings were largely attended, and the discussions were kept up with an animation and interest which shows that the subject of promotion is receiving widespread and serious attention.

President Huling presented for the last time the Schubert Quartette, who sang "Lullaby," by Brahms.

The closing event of this highly successful meeting was the induction into office of the president-elect, Mr. George H. Martin. President Huling presented the gavel to his successor with the following remarks:

The time has now come for me to place in the hands of another the responsibilities connected with the presidency of the American Institute. For myself, I can scarcely tell whether I am glad or sorry. It is now some eight years since my lot has been cast among those in the active management of the Institute. These years have brought me many cares and much earnest labor because of this relation; but as I now look back upon them I see that whatever I have been able to do for the Institute has been far less in value than what the Institute has done for me. I remember that the needs of the work have called out and developed executive ability which I had not, because I had not used it. I remember more especially the inspiring friendships which have come to me from association with the leaders of educational

thought in New England, some of whom are here before me, and some of whom are now up yonder. I am glad to testify to the enjoyment of working hand in hand with such helpers as our energetic Secretary and our much enduring Treasurer, and their able Assistants, the amount and quality of whose labor in behalf of the Institute can never be fully understood except from within the circle of immediate control. There are joys in such work which only those know who throw themselves into it with unselfish earnestness. But there are joys, too, in freedom. When I go up to the great gathering at Saratoga next week, it will be as a free and careless private, bearing a sense of relief which has not for years been my companion at such gatherings.

It is, therefore, with a mingled feeling of joy and of regret that I tender to you, sir, this symbol of the authority of the grand old American Institute of Instruction. However confused may be my feeling about myself, concerning you, my conviction is entirely clear that the interests of this institution are in most worthy hands. Because of recent events, if for no other reason, we may be sure that whenever New England needs one to defend her, she will have a ready and able advocate in the new president of her oldest educational association.

On accepting the trust, President Martin replied:

Knowing what the American Institute has been and what it has done, I should exhibit "dense insensibility"—I believe that is now the approved phrase—if I were not deeply moved by the honor you have conferred upon me, an honor which I feel to have been unearned as it was unexpected. Teachers are sometimes fortunate in following unsuccessful men. No such good fortune awaits me. I cannot win honor by rectifying the mistakes of my predecessor. I cannot hope to bring to the work the wisdom to plan, the skill to execute, the felicity and grace to preside, of the retiring president. I can only do what I may to see that the Institute fulfils its mission.

As we come to the close of this meeting, held on Rhode Island soil, we cannot forget the impulse which came from this state at the first meeting in 1830, when President Wayland, of Brown University, delivered the opening address. There are men living

who delight to tell what inspiration they received for their chosen work from that most stimulating discourse. It struck the key-note to which the Institute in all its history has been responding. That key-note was Progress.

As I have sat here this evening I have thought of the changes that have come during these sixty-two years. Had President Wayland, when he made that opening address, instead of standing in the hall of the Massachusetts House of Representatives, stood where we stand to-night, between the curtain and the foot-lights of a theatre, with a dancing-floor in front, a billiard-room beyond, and a bowling-alley behind, and in an atmosphere vocal with worldly songs, the American Institute would have been swamped in the launching. Tolerant as Rhode Island has always been, she would have banished Francis Wayland as summarily as Massachusetts had banished Roger Williams two hundred years before. But this change in environment is typical of the changes which have come in educational life and thought. There has been a broadening of the ideas of education, its purposes, its spirit, and its methods. What to the fathers seemed individual and social perdition, to us seems innocent and healthful recreation, and necessary to keep men in condition for the work of modern life.

So year by year educational ideals have been changing, and the founders of the Institute who were then in the foremost line of progress would be the first to-day to approve the new, and set their standard at the front.

It is our duty to possess ourselves of their spirit as we take up their work, and to keep the Institute still in line with the most advanced ideals. For my own part of this work, I invite, in advance, your kind consideration, as I know I shall have your hearty coöperation.

The benediction was pronounced by Rev. T. C. Pease, of Malden, Mass., and President Martin declared the Sixty-third Annual Meeting of the American Institute adjourned.

Directors' Meeting.

Immediately after the adjournment of the Institute, the customary meeting of the Board of Directors was held in the Casino. The following standing committees were appointed:

Finance.

G. A. Walton, West Newton, Mass.
T. B. Stockwell, Providence, R. I.
George I. Aldrich, Newton, Mass.

Membership.

M. G. Daniell, Boston, Mass.
C. L. Ames, Hartford, Conn.
George A. Williams, Saxton's River, Vt.
With the President, Secretary, and Treasurer.

Necrology.

D. N. Camp, New Britain, Conn.
J. S. Barrell, Cambridge, Mass.
J. A. Page, Boston, Mass.

Printing Volume.

George H. Martin, Lynn, Mass.
Charles W. Parmenter, Cambridge, Mass.
James W. Webster, Malden, Mass.

Committee of Arrangements for the Annual Meeting of 1893.

George H. Martin, 388 Summer St., Lynn, Mass.
Charles W. Parmenter, 19 Fayette St., Cambridge, Mass.
James W. Webster, 588 Main St., Malden, Mass.
Lewis H. Meader, 21 Andem St., Providence, R. I.
Leverett L. Camp, 1303 Chapel St., New Haven, Conn.

CONSTITUTION

OF THE

AMERICAN INSTITUTE OF INSTRUCTION.

Adopted, August, 1870, as a substitute for the older one, and amended July, 1886, and July, 1891.

PREAMBLE.

We, whose names are hereunto subjoined, pledging our zealous efforts to promote the cause of popular education, agree to adopt the following Constitution.

ARTICLE I.—NAME.

The society shall be known by the title of The American Institute of Instruction.

ARTICLE II.—MEMBERS.

1. The members of this Institute shall be divided into three classes, styled active, associate, and honorary.

2. Any person interested in the cause of education and recommended by the Committee on Membership, may become an active member by a major vote of the members present and voting at any regular meeting.

3. Only active members shall be empowered to vote and hold office.

4. Any active member who shall for the period of one year neglect to pay the annual assessment, shall, by such neglect forfeit his membership.

5. Any person of good moral character may become an associate member for the current year by paying the annual assessment.

6. Honorary members may be elected by the Institute on recommendation of two thirds of the Directors present at any stated meeting of the Board.

ARTICLE III—Meetings.

1. The Annual Meeting shall be held at such time and place as the Board of Directors shall appoint.

2. Special meetings may be called by the Directors.

3. Due notice of the meetings of the Institute shall be given in the public journals.

ARTICLE IV.—Officers.

1. The officers of the Institute shall be a President, Vice-Presidents, a Secretary, an Assistant Secretary, a Treasurer, an Assistant Treasurer, and Twelve Counsellors, all of whom shall constitute a Board of Directors.

2. The officers shall be elected annually by ballot, and shall continue in office till their successors shall be chosen.

ARTICLE V.—Duties of Officers.

1. The Secretary shall give notice of all meetings of the Institute and of the Board of Directors, and shall keep a record of their transactions.

2. The Treasurer shall collect and receive all moneys of the Institute, and shall render an accurate statement of his receipts and payments annually, and whenever called upon by the Board of Directors, to whom he shall give such bonds for the faithful performance of his duty as they shall require. He shall make no payment, except by order of the Finance Committee of the Board.

3. The Board of Directors shall devise and carry into execution such measures as may promote the general interests of the Institute, shall have charge of the property of the Institute, shall be authorized to publish its proceedings, and such papers relating to education as may seem to them desirable. They shall have power to fill all vacancies in their Board, from members of the Institute, and make By-Laws for its government. They shall have power to vote an annual assessment of one dollar upon the members, except honorary members, and to remit the payment thereof, when in their judgment it may seem wise to do so. They shall annually elect the following standing committees:

(1) A committee of three, who, with the President, Secretary,

and Treasurer, shall constitute the Committee on Membership, whose duty it shall be to report to the Institute, from time to time, the names of such persons as they may recommend for membership.

(2) A committee of three on Finance, whose duty it shall be to audit the accounts of the Treasurer and, under the control of the Board of Directors, to draw orders on the Treasurer for the payment of charges against the Institute.

(3) A committee of three on Necrology.

4. Stated meetings of the Board shall be held on the first Saturday in January, and on the first day of the Annual Meeting of the Institute.

ARTICLE IV.—By-Laws and Amendments.

1. By-Laws not repugnant to this Constitution may be adopted at any regular meeting.

2. This Constitution may be altered or amended by a vote of two thirds of the members present at the Annual Meeting, provided two thirds of the Directors present at a stated meeting shall agree to recommend the proposed alteration or amendment.

BY-LAWS.

1. At all meetings of the Board of Directors, seven members shall be necessary to constitute a quorum to do business.

2. It shall be the duty of the Secretary, on application of any two Directors, to call special meetings of the Board at such time and place as the President may appoint.

3. Before each Annual Meeting, the Treasurer shall have printed certificates of membership, numbered consecutively from one upward. These certificates shall be attached to stubs having the corresponding numbers printed thereon. The book of stubs left after the certificates of membership are detached therefrom shall form a part of the Treasurer's account, to be delivered to the Finance Committee, for the purpose of auditing the accounts of the Institute.

OFFICERS

OF THE

AMERICAN INSTITUTE OF INSTRUCTION.

1892–93.

President.

GEORGE H. MARTIN, 388 Summer St., Lynn, Mass.

Secretary.

CHARLES W. PARMENTER, 19 Fayette St., Cambridgeport, Mass.

Treasurer.

JAMES W. WEBSTER, 588 Main St., Malden, Mass.

Ass't Secretary.

LEWIS H. MEADER, 21 Andem St., Providence, R. I.

Ass't Treasurer.

LEVERETT L. CAMP, 1303 Chapel St., New Haven, Conn.

Vice-Presidents.

MAINE.

W. J. Corthell, Gorham.
H. M. Estabrook, Orono.
G. B. Files, Lewiston.
R. E. Gould, Biddeford.
James H. Hanson, Waterville.
Mary E. Hughes, Castine.
Wm. De W. Hyde, Brunswick.
L. G. Jordan, Lewiston.
O. W. Lord, Portland.
G. C. Purrington, Farmington.
A. F. Richardson, Castine.
E. P. Sampson, Saco.
N. A. Sargent, Hebron.
Albion W. Small, Waterville.
W. W. Stetson, Auburn.
G. A. Stuart, Lewiston.

NEW HAMPSHIRE.

Wm. E. Buck, Manchester.
C. H. Clark, Kingston.
Channing Folsom, Dover.
Amos Hadley, Concord.
L. S. Hastings, Nashua.
John K. Lord, Hanover.
D. G. Miller, Meriden.
John Pickard, Portsmouth.
Charles C. Rounds, Plymouth.
L. J. Rundlett, Concord.
J. H. Willoughby, Nashua.

VERMONT.

M. H. Buckham, Burlington.
A. H. Campbell, Johnson.
Edward Conant, Randolph.
A. L. Hardy, St. Johnsbury.
S. W. Landon, Burlington.
Edwin F. Palmer, Waterbury.
G. A. Williams, Saxton's River.

MASSACHUSETTS.

George I. Aldrich, Quincy.
Thomas M. Balliet, Springfield.
Thomas H. Barnes, Boston.
Herbert H. Bates, Cambridge.
Albert G. Boyden, Bridgewater.
W. F. Bradbury, Cambridge.
O. B. Bruce, Lynn.
W. A. Clark, Jr., Lynn.
Francis Coggswell, Cambridge.
M. Grant Daniell, Roxbury.
Larkin Dunton, Boston.
S. T. Dutton, Brookline.
W. E. Eaton, Reading.
Joseph G. Edgerly, Fitchburg.
A. W. Edson, Worcester.
A. M. Edwards, Pittsfield.
Thomas Emerson, Newton.
Geo. T. Fletcher, Northampton.
Homer T. Fuller, Worcester.
Arthur L. Goodrich, Salem.
E. J. Goodwin, Newton.
J. C. Greenough, Westfield.
D. B. Hagar, Salem.
C. P. Hall, Winchendon.
H. C. Hardon, Newton.
Wm. E. Hatch, New Bedford.
Charles W. Hill, Boston.
J. M. Hill, Hyde Park.
Ray Greene Huling, New Bedf'd.
Ellen Hyde, Framingham.
Daniel W. Jones, Boston.
Charles F. King, Boston.
John Kneeland, Boston.
Samuel W. Mason, Chelsea.
A. D. Mayo, Boston.
Robert C. Metcalf, Boston.
Charles H. Morss, Milton.
A. E. Nolen, Fitchburg.
John O. Norris, Melrose,
Hiram Orcutt, Boston.
James A. Page, Boston.
Alvin F. Pease, Northampton.
John T. Prince, Newton.
W. A. Robinson, Boston.
Charles P. Rugg, New Bedford.
E. D. Russell, Lynn.

Edwin P. Seaver, Newton.
William E. Sheldon, Newton.
E. P. Sherburne, Brookline.
A. D. Small, Boston.
Elbridge Smith, Boston.
G. A. Southworth, Somerville.
A. P. Stone, Springfield.
E. Norris Sullivan, Boston.
John Tetlow, Boston.
W. W. Waterman, Clinton.
Henry Whittemore, Waltham.
O. S. Williams, Dedham.
A. E. Winship, Somerville.

RHODE ISLAND.

W. N. Ackley, Narragans't Pier.
Dwight R. Adams, Centreville.
E. B. Andrews, Providence.
Benj. Baker, Newport.
George E. Church, Providence.
Sarah E. Doyle, Providence.
Albert Harkness, Providence.
E. H. Howard, Providence.
D. W. Hoyt, Providence.
W. B. Jacobs, Providence.
L. H. Meader, Providence.
Joseph E. Mowry, Providence.
J. M. Nye, Phenix.
William T. Peck, Providence.
Levi W. Russell, Providence.
James M. Sawin, Providence.
Thos. B. Stockwell, Providence.
Horace S. Tarbell, Providence.
W. E. Wilson, Providence.

CONNECTICUT.

C. L. Ames, Hartford.
Henry Barnard, Hartford.
F. F. Barrows, Hartford.
J. N. Bartlett, New Britain.
J. D. Bartley, Bridgeport.
N. L. Bishop, Norwich.
D. N. Camp, New Britain.
C. F. D. Carroll, New Haven.
Ella A. Fanning, Norwich.
J. A. Graves, Hartford.
C. D. Hine, Hartford.
Dwight Holbrook, Clinton.
Chas. Northend, New Britain.
B. G. Northrop, Clinton.
John H. Peck, New Britain.
Esther C. Perry, Hartford.
Henry D. Simonds, Bridgeport.
W. I. Twitchell, Hartford.
Everett C. Willard, Stamford.

ELSEWHERE.

William T. Harris, Washington, D. C.
John Eaton, Washington, D. C.
H. P. Warren, Albany, N. Y.
George J. Cummings, Washington, D. C.
Thomas J. Morgan, Washington, D. C.

COUNSELLORS.

James S. Barrell, Cambridge, Mass.
Thomas W. Bicknell, Boston, Mass.
J. Milton Hall, Providence, R. I.
Frank A. Hill, Cambridge, Mass.
George A. Littlefield, Providence, R. I.
A. J. Manchester, Providence, R. I.
Albert P. Marble, Worcester, Mass.
William A. Mowry, Salem, Mass.
James W. Patterson, Hanover, N. H.
E. R. Ruggles, Hanover, N. H.
Benj. F. Tweed, Cambridge, Mass.
George A. Walton, West Newton, Mass.

ACTIVE MEMBERS

OF THE

AMERICAN INSTITUTE OF INSTRUCTION.

Alba R. Abbott, Providence, R. I.
W. N. Ackley, Narragansett Pier, R. I.
Dwight R. Adams, Centreville, R. I.
W. P. Adams, Boston, Mass.
George I. Aldrich, Newton, Mass.
William R. Alger, Boston, Mass.
J. W. Allen, Medfield, Mass.
Nathaniel T. Allen, West Newton, Mass.
Valentine Almy, Tiverton Town Corners, R. I.
C. L. Ames, Hartford, Conn.
E. Benjamin Andrews, Providence, R. I.
J. B. Angell, Ann Arbor, Mich.
M. F. Atwood, Chelsea, Mass.
Mark Bailey, New Haven, Conn.
Benjamin Baker, Newport, R. I.
Henry S. Baker, St. Paul, Minn.
Miss Myra H. Baker, Philipston, Mass.
Miss Sarah J. Baker, Boston, Mass.
Thomas M. Balliet, Springfield, Mass.
Nathaniel P. Banks, Waltham, Mass.
Henry Barnard, Hartford, Conn.
Thomas H. Barnes, Boston, Mass.
Miss Jennie S. Barney, Canaan, N. H.
James S. Barrell, Cambridge, Mass.
F. F. Barrows, Hartford, Conn.
Miss Cora V. Bartlett, Cincinnati, Ohio.
J. D. Bartley, Bridgeport, Conn.
Cyrus A. Bartol, Boston, Mass.
Wm. Bascom, Williamstown, Mass.
Miss Etta Bates, No. Scituate, Mass.
Herbert H. Bates, Cambridge, Mass.
William C. Bates, Lawrence, Mass.
Miss F. S. Beane, Davenport, Iowa.
David Beattie, Troy, N. Y.
E. Belknap, Whitehall, N. Y.
Thomas W. Bicknell, Boston, Mass.

N. L. Bishop, Norwich, Conn.
Clarence E. Blake, Springfield, Mass.
W. L. P. Boardman, Milton, Mass.
Miss Nellie E. Boyd, Chelsea, Mass.
Albert G. Boyden, Bridgewater, Mass.
Wm. F. Bradbury, Cambridge, Mass.
David H. Brown, W. Medford, Mass.
Henry W. Brown, New Hampton, N. H.
Moses T. Brown, College Hill, Mass.
O. B. Bruce, Lynn, Mass.
William E. Buck, Manchester, N. H.
M. H. Buckham, Burlington, Vt.
N. H. Bull, Oneonta, N. Y.
Miss Mary Bull, Oneonta, N. Y.
Alfred Bunker, Boston, Mass.
Miss Alice M. Burbank, Webster, N. H.
Miss Alice E. Burgess, East Orange, N. J.
Nicholas Murray Butler, New York City, N. Y.
Hezekiah Butterworth, Boston, Mass.
N. A. Calkins, New York City, N. Y.
D. N. Camp, New Britain, Conn.
L. L. Camp, New Britain, Conn.
A. H. Campbell, Johnson, Vt.
Miss Emma Carbee, Woodsville, N. H.
I. N. Carleton, Bradford, Mass.
Miss Mary Carpenter, Seekonk, Mass.
C. F. D. Carroll, New Haven, Conn.
Thomas Chace, Providence, R. I.
A. A. Champney, Whitman, Mass.
Henry L. Chase, Lynn, Mass.
Albro E. Chase, Portland, Me.
Harold C. Childs, Brockton, Mass.
George E. Church, Providence, R. I.
C. H. Clark, Kingston, N. H.
W. A. Clark, Jr., Lynn, Mass.
Charles C. Coffin, Boston, Mass.
Francis Cogswell, Cambridge, Mass.
Wm. C. Collar, Boston, Mass.
Edward Conant, Randolph, Vt.
W. J. Corthell, Gorham, Me.
O. W. Cook, Swampscott, Mass.
Henry S. Cowell, Ashburnham, Mass.
J. H. Cozzens, Newport, R. I.
Lewis W. Craig, Merrimac, Mass.
George J. Cummings, Washington, D. C.
Miss Mary E. Curtis, Marlboro, Mass.
Rest F. Curtis, Boston, Mass.
W. W. Curtis, Pawtucket, R. I.
Thomas Cushing, Boston, Mass.
Sanford L. Cutler, Hatfield, Mass.
Frederick S. Cutter, Cambridge, Mass.
Charles W. Cutts, New Hampton, N. H.
D. P. Dame, Littleton, N. H.
M. Grant Daniell, Boston, Mass.
Justus Dartt, Gardner, Mass.

Miss Mary Davenport, Brooklyn, N. Y.
Miss Eliza A. Davis, Lowell, Mass.
E. H. Davis, Chelsea, Mass.
B. C. Day, No. Craftsbury, Vt.
Charles E. Dennis, Jr., Providence, R. I.
J. DeBoer, Montpelier, Vt.
Q. E. Dickerman, Boston, Mass.
John W. Dickinson, Newton, Mass.
A. E. Dolbear, College Hill, Mass.
Charles H. Douglas, Keene, N. H.
Miss Sarah E. Doyle, Providence, R. I.
Edgar R. Downs, South Weymouth, Mass.
Larkin Dunton, Boston, Mass.
S. T. Dutton, Brookline, Mass.
Geo. T. Eaton, Andover, Mass.
John Eaton, Washington, D. C.
W. E. Eaton, Reading, Mass.
Joseph G. Edgerly, Fitchburg, Mass.
A. W. Edson, Worcester, Mass.
Richard Edwards, Springfield, Mass.
A. M. Edwards, Pittsfield, Mass.
Charles W. Eliot, Cambridge, Mass.
Samuel Eliot, Boston, Mass.
Thomas Emerson, Newton, Mass.
H. M. Estabrook, Gorham, Me.
Miss Ella A. Fanning, Norwich, Conn.
G. B. Files, Augusta, Me.
George T. Fletcher, Northampton, Mass.
Channing Folsom, Dover, N. H.
Miss S. Edith Fowler, Short Falls, N. H.
Miss Vesta G. Fowler, Short Falls, N. H.
Homer T. Fuller, Worcester, Mass.
Wm. Fuller, Lynn, Mass.
Miss A. M. Gamwell, Providence, R. I.
Merrill E. Gates, Amherst, Mass.
Miss Annie E. George, Newton, Mass.
H. H. George, Beaver Falls, Penn.
D. C. Gilman, Baltimore, Md.
Miss Jane E. Gilmore, New Bedford, Mass.
Arthur L. Goodrich, Salem, Mass.
E. J. Goodwin, Newton, Mass.
E. R. Goodwin, Lawrence, Mass.
R. E. Gould, Biddeford, Me.
J. A. Graves, Hartford, Conn.
J. M. Greene, Long Branch, N. J.
J. C. Greenough, Westfield, Mass.
Amos Hadley, Concord, N. H.
Daniel B. Hagar, Salem, Mass.
C. P. Hall, Winchendon, Mass.
G. Stanley Hall, Worcester, Mass.
G. W. M. Hall, Boston, Mass.
J. Milton Hall, Providence, R. I.
James H. Hanson, Waterville, Me.
Paul H. Hanus, Cambridge, Mass.
Henry C. Hardon, Newton, Mass.
A. L. Hardy, St. Johnsbury, Vt.
Albert Harkness, Providence, R. I.

H. M. Harrington, New York City.
Wm. T. Harris, Washington, D. C.
Edward M. Hartwell, Boston, Mass.
Lemuel S. Hastings, Nashua, N. H.
William E. Hatch, New Bedford, Mass.
Miss W. W. Hayward, Providence, R. I.
D. C. Heath, Boston, Mass.
R. G. Hibbard, New Britain, Conn.
Charles W. Hill, Boston, Mass.
Frank A. Hill, Cambridge, Mass.
Jere. M. Hill, Hyde Park, Mass.
Thomas Hill, Portland, Me.
C. D. Hine, Hartford, Conn.
Miss Bertha W. Hintz, Boston, Mass.
J. M. Hitt, Northfield, Vt.
L. F. Hobbs, West Medford, Mass.
Dwight Holbrook, Clinton, Conn.
Miss Lena Holmes, Kingston, Mass.
Irving W. Horne, Chelsea, Mass.
George T. Houghton, Auburndale, Mass.
E. H. Howard, Providence, R. I.
Mrs. Julia Ward Howe, Boston, Mass.
D. W. Hoyt, Providence, R. I.
Eli A. Hubbard, Hatfield, Mass.
Miss Cora I. Hudson, Providence, R. I.
Miss Mary E. Hughes, Castine, Me.
Ray Greene Huling, New Bedford, Mass.
Harrison Hume, Boston, Mass.
F. D. Huntington, Syracuse, N. Y.
Isaac Huse, Jr., Salt Lake City, Utah.
Miss Eliza M. Hussey, Cambridge, Mass.
Miss Ellen Hyde, Framingham, Mass.
Wm. DeWitt Hyde, Brunswick, Me.
Charles S. Jackson, Lynn, Mass.
Edmund J. James, Philadelphia, Penn.
Miss Jeannie L. Jillson, Providence, R. I.
F. L. Johnson, Spencer, Mass.
Daniel W. Jones, Boston, Mass.
L. G. Jordan, Lewiston, Me.
H. W. Keach, Valley Falls, R. I.
Robert P. Keep, Norwich, Conn.
A. M. Kellogg, New York City, N. Y.
Charles F. King, Boston, Mass.
John Kneeland, Boston, Mass.
H. B. Knox, Palmer, Mass.
H. O. Ladd, Santa Fe, New Mexico.
Wm. H. Ladd, Boston, Mass.
S. W. Landon, Burlington, Vt.
W. C. Lawton, Brunswick, Me.
Miss Florence E. Leadbetter, Boston, Mass.
Miss Maud E. Leadbetter, Boston, Mass.
Amos M. Leonard, Boston, Mass.
Miss Caroline B. LeRow, Brooklyn, N. Y.

Hosea H. Lincoln, Boston, Mass.
George A. Littlefield, Providence, R. I.
Mrs. Mary A. Livermore, Melrose, Mass.
C. S. Locke, W. Dedham, Mass.
John K. Lord, Hanover, N. H.
L. C. Lord, Moorhead, Minn.
O. W. Lord, Portland, Me.
A. J. Manchester, Providence, R. I.
Albert P. Marble, Worcester, Mass.
Elias H. Marston, Somerville, Mass.
John P. Marston, Biddeford, Me.
George H. Martin, Lynn, Mass.
Thomas Martin, Barton, Vt.
Samuel W. Mason, Chelsea, Mass.
H. M. Maxson, Pawtucket, R. I.
A. D. Mayo, Boston, Mass.
Lewis H. Meader, Providence, R. I.
C. E. Meleney, Somerville, Mass.
Moses Merrill, Boston, Mass.
Robert C. Metcalf, Boston, Mass.
A. A. Miner, Boston, Mass.
D. G. Miller, Meriden, Conn.
Mrs. H. M. Miller, Providence, R. I.
Miss Maria C. Mondy, London, England.
W. S. Montgomery, Washington, D. C.
Thomas J. Morgan, Washington, D. C.
Miss A. W. Morrison, Lawrence, Mass.
Edward S. Morse, Salem, Mass.
Miss Josie E. Morse, Marlboro, Mass.
Charles H. Morss, Portsmouth, N. H.
Joseph E. Mowry, Providence, R. I.
William A. Mowry, Salem, Mass.
A. B. Muzzy, Cambridge, Mass.
W. H. Niles, Cambridge, Mass.
A. Eugene Nolen, Fitchburg, Mass.
I. M. Norcross, Weymouth, Mass.
John O. Norris, Melrose, Mass.
F. A. North, Plantsfield, Conn.
Charles Northend, New Britain, Conn.
B. G. Northrop, Clinton, Conn.
J. M. Nye, Phenix, R. I.
Hiram Orcutt, Boston, Mass.
Alpheus S. Packard, Providence, R. I.
Miss Eliza S. Paddock, Cambridge, Mass.
James A. Page, Boston, Mass.
Mrs. Alice Freeman-Palmer, Cambridge, Mass.
E. F. Palmer, Waterbury, Vt.
Francis W. Parker, Chicago, Ill.
Wm. D. Parkinson, Taunton, Mass.
Charles W. Parmenter, Cambridgeport, Mass.
Miss Carrie J. Partenheimer, Northampton, Mass.
James W. Patterson, Hanover, N. H.
Andrew P. Peabody, Cambridge, Mass.

Miss A. Olive Pearson, Reading, Mass.
Alvin F. Pease, Northampton, Mass.
John H. Peck, New Britain, Conn.
William T. Peck, Providence, R. I.
Miss E. A. S. Pennell, Brunswick, Me.
Josiah H. Penniman, Philadelphia, Penn.
A. Perry, Williamstown, Mass.
Miss Julia E. Phelps, Northampton, Mass.
John Pickard, Portsmouth, N.H.
J. L. Pickard, Iowa City, Iowa.
Edward C. Pickering, Cambridge, Mass.
A. B. Poland, Jersey City, N. J.
Miss E. F. Porter, Somerville, Mass.
John T. Prince, Newtonville, Mass.
Geo. C. Purrington, Farmington, Me.
Benjamin W. Putnam, Jamaica Plain, Mass.
Granville B. Putnam, Newton, Mass.
Walter E. Ranger, Lyndon Centre, Vt.
Miss Elizabeth H. Ray, Northampton, Mass.
Miss Sarah E. Raymond, Bloomington, Ill.
Charles L. Reed, Kingston, Mass.
Miss Eva M. Reed, Hudson, Mass.
Thomas G. Rees, Lynn, Mass.
Miss Anna L. Rice, Springfield, Mass.
W. N. Rice, Middletown, Mass.
Zalmon Richards, Washington, D. C.
A. F. Richardson, Castine, Me.
W. A. Robinson, Roxbury, Mass.
Miss N. J. Rollins, New Britain, Conn.
Clarence B. Roote, Northampton, Mass.
Henry R. Roth, Marlboro, Mass.
Charles C. Rounds, Plymouth, N. H.
Charles P. Rugg, New Bedford, Mass.
George Rugg, New Bedford, Mass.
E. R. Ruggles, Hanover, N. H.
L. J. Rundlett, Concord, N. H.
J. D. Runkle, Brookline, Mass.
Eugene D. Russell, Lynn, Mass.
Frank T. Russell, Waterbury, Conn.
Levi W. Russell, Providence, R. I.
E. P. Sampson, Saco, Me.
Benjamin H. Sanborn, Wellesley, Mass.
John P. Sanborn, Newport, R. I.
N. A. Sargent, Hebron, Me.
L. Sauveur, New York City, N. Y.
H. Chapin Sawin, Newton, Mass.
James N. Sawin, Providence, R. I.
Henry E. Sawyer, Northfield, Mass.
Edwin P. Seaver, Newton, Mass.
Julius H. Seelye, Amherst, Mass.
L. Clark Seelye, Northampton, Mass.

H. H. Seerley, Cedar Rapids, Iowa.
J. B. Sharland, Boston, Mass.
Frederick T. Sharp, No. Craftsbury, Vt.
John J. Sheehan, Boston, Mass.
Wm. E. Sheldon, Newton, Mass.
E. P. Sherburne, Brookline, Mass.
Miss Celia Sherman, Royalton, Vt.
Miss Ella Sherman, So. Kingston, R. I.
Miss A. E. Shipman, New Britain, Conn.
Henry D. Simonds, Bridgeport, Conn.
H. E. Slaught, Hightstown, N. J.
Albion W. Small, Waterville, Me.
Augustus D. Small, Boston, Mass.
Miss Belle Small, Laconia, N.H.
M. C. Smart, Claremont, N. H.
Elbridge Smith, Boston, Mass.
H. I. Smith, Boston, Mass.
G. A. Southworth, Somerville, Mass.
Homer B. Sprague, Grand Falls, Dakota.
Randall Spaulding, Mont Clair, N. J.
Miss Addie H. Spooner, Sugar Hill, N. H.
Wilson S. Steere, Olneyville, R. I.
W. W. Stetson, Auburn, Me.
J. C. Stockbridge, Providence, R. I.
Thos. B. Stockwell, Providence, R. I.
Admiral P. Stone, Springfield, Mass.
G. A. Stuart, Lewiston, Me.
Miss J. B. Stuart, New Bedford, Mass.
E. Norris Sullivan, Boston, Mass.
Horace S. Tarbell, Providence, R. I.
James B. Taylor, Newton, Mass.
J. M. Taylor, Poughkeepsie, N. Y.
John Tetlow, Boston, Mass.
E. S. Thayer, Fall River, Mass.
Rev. Wm. M. Thayer, Franklin, Mass.
Frank E. Thompson, Newport, R. I.
Samuel Thurber, Boston, Mass.
H. H. Todd, Bridgeport, Conn.
Miss Mary A. Todd, Lynn, Mass.
H. F. Towle, Brooklyn, N. Y.
George H. Tripp, New Bedford, Mass.
Miss Elizabeth True, Ellsworth, Me.
Miss Edith S. Tufts, Wellesley, Mass.
Benj. F. Tweed, Cambridge, Mass.
W. I. Twitchell, Hartford, Conn.
Geo. A. Tyzzer, Winchester, Mass.
Miss Mabel E. A. Waite, Providence, R. I.
Isaac Walker, Pembroke, N. H.
Miss M. Blanche Wallace, Pembroke, N. H.
Geo. A. Walton, West Newton, Mass.
C. A. Wardwell, Bath, Me.

H. P. Warren, Albany, N. Y.
W. W. Waterman, Clinton, Mass.
Eugene C. Webster, E. Providence, R. I.
Jas. W. Webster, Malden, Mass.
Miss Mary C. Wells, New Britain, Conn.
Miss Annie F. Wetherbee, Marlboro, Mass.
Miss Imogene Wheeler, Jersey City, N. J.
Miss Lucy Wheelock, Boston, Mass.
E. E. White, Cincinnati, Ohio.
Henry Whittemore, Waltham, Mass.
Miss Carrie E. Wilcox, New Britain, Conn.
Miss Annie J. Wilder, Marlboro, Mass.
John D. Wight, Worcester, Mass.
Geo. A. Williams, Saxton's River, Vt.
O. S. Williams, Dedham, Mass.
J. H. Willoughby, Nashua, N. H.
W. E. Wilson, Providence, R. I.
A. E. Winship, Somerville, Mass.
Allen F. Wood, New Bedford, Mass.
George Willard Wood, Lewiston, Me.
John C. Worcester, W. Boylston, Mass.
E. Bentley Young, Boston, Mass.

ADDRESSES.

I.

THE IMPORTANCE OF ECONOMIC PSYCHOLOGY TO TEACHERS.

By Simon N. Patten, of the University of Pennsylvania.

The last twenty years have been a complete revolution in the ideas which teachers have of the preparation needed for their work. Teaching is no longer a temporary occupation, designed to fill in the vacant space between school-days and the period of maturity, when a more profitable occupation can be found in other callings. A superior class of young men and women are now seeking for the best preparation that our schools can give, with the purpose of devoting their energies and their lives to the advancement of the cause of education. If the next generation does not see a great advance in the art of teaching and a revolution in our ideas of school administration, the fault will not lie with those who are now earnestly seeking after improved methods of instruction. It must lie with those who at present direct the educational forces of our nation.

There is therefore an urgent need of emphasizing the difficulties which students of educational problems often have in getting a correct concept of education from their instructors. It is so inspiring to talk in general terms, and to lay out a broad theory of education, that the obstacles to its realization through present means are overlooked. The student is started on

a road, pleasant to look at, and which seems to lead directly to the desired results, and yet, if followed but a short distance, it sinks into a by-path obstructed by difficulties that only the most hardy can overcome.

The cause of this disappointment and failure, however, is not wholly the fault of the educator of teachers, but of the sciences in which the student of pedagogy must begin the preparation for his future career. If these introductory sciences were fully developed and well coördinated, a chart of the ground could easily be made over which the student must travel. But unfortunately those sciences upon which the teacher must mainly depend for his ideas of the scientific methods of investigation are still in a fragmentary form, and their parts are so ill arranged that even specialists in them are likely to lose their bearings. Physiology and psychology—the most intimately related to pedagogy of all the sciences—are yet empirical; botany and biology are not in much better shape; while geography and literature have scarcely assumed that scientific form which their importance demands. Using such material, the progress of a teacher must be slow and his disappointments many.

With the sciences in such an incomplete condition, it is also to a large degree accidental if the student of pedagogy finds a fitting place for him to start. Each student has inherited by nature more or less aptitude for observation and induction, and a certain natural bent has been given to his logical powers. Unless a given science affords opportunity for just such talent as the student has, or unless it is at that stage of its progress where workers like himself can move it along

a stage in its development, he will soon lose interest in it, and perhaps all his enthusiasm for further scientific study.[1]

There rests, therefore, upon educators a deep responsibility for the advice they give to students, who are always more or less uncertain of their logical powers and of their ability to do a given kind of scientific work. All inductive sciences have many starting-points, and the selection of the proper one for a particular student is a difficult task. And, in addition, it often happens that a science is in a state of transition from a lower to a higher form, so that a new class of intellects is the most likely to be efficient in hastening the change. The important epochs in every science are caused by its cultivation by a new class of men with new instincts and other powers of observation and deduction. When in any science we speak of a biological, a chemical, a geometrical, a physical, or a mathematical method, we mean that the science has been taken up by men educated in some one of these branches of knowledge, who have carried the method of their particular science over into the new science which they are now seeking to develop.

I have made use of this introduction in the hope of causing a partial realization of the difficulties that beset any real advance in the cause of education, and especially to make clear the hindrances to the acquisition of an interest in the science of psychology. We all recognize that this science lies at the basis of all true educational doctrine. It is only possible to make

[1] See Patten, "The Educational Value of College Studies." *The Edutional Review*, February, 1891.

pedagogy a vital force when all teachers, even those of average ability, have acquired a taste for psychological study and can apply its principles in the complicated conditions of the school-room. Many educators, having found some method of psychological investigation well fitted to their own wants, do not realize that the faculties and logical ability of many of their students are so different from their own that these students do not find the door through which their instructor entered the science of any avail for themselves. These difficulties must continue as long as psychology remains an empirical science, in which there are biological, physiological, introspective, and as many other methods as there are classes of investigators bringing from other sciences the methods of inquiry through which these respective sciences have been advanced to higher stages of progress. While this imperfect state of the science continues, each method furnishes a new avenue through which some class of persons becomes interested in the science that otherwise would remain indifferent to it. Yet this important fact is overlooked by teachers of pedagogy, or at least but imperfectly recognized. A single method, or, at best, only two methods, of investigation have their claims admitted, and if the students have not that type of mind which is attracted by these methods, pedagogical studies have but little interest for them.

It is in behalf of one of the neglected entrances to psychology that I desire to devote my main attention in this paper. It may seem strange at first to hear of *economic* psychology, or of *race* psychology. Yet these are but different names for a method of investigating

those psychological problems that have arisen in the social sciences. The social progress of the race depends upon changes in its psychical premises. Every step of this progress is conditioned by the acquisition of new instincts, habits, and customs that are psychical in their character. The economist and sociologist therefore must investigate psychological problems in order to solve the problems of their own science.

If psychology were a completed science, these investigators would call upon it for the premises needed in their own work, and thus be enabled to confine their attention to the economic or sociological questions. But psychologists have not done the work needed by those interested in social studies. Hence they have been compelled to turn psychologists themselves, to collect their own material, and to construct their own premises. In this way a form of psychology has arisen, which, in its development, has run parallel to current psychology and yet has been separated from it by a gulf, because each of these classes of investigators has confined itself to a particular field, and lacks an interest in the work of the other classes. This isolation is largely due also to the education and mental characteristics of the different groups of workers. They are usually zealous advocates of their particular method of investigation, often denying the validity of other methods. Few have the breadth needed to perceive the limits to their own method, or to recognize that other students can find a better entrance into an empirical science through some other door.

Before entering into a more detailed explanation of *economic* or *race* psychology, a preliminary statement of

the methods of current psychology is needed, so that a proper correlation of the parts of the science may be secured. At present two forms of psychology are struggling for a dominant place—introspective or self psychology, and physiological psychology. The former is often called the old psychology, because it was until recently the sole method used by philosophical writers. The latter—the new psychology—claims to be the only scientific psychology because it uses the methods of the physical sciences.

A self-psychology is a science of the soul, and not an investigation of brain and nerves. Here we begin with the observation of conscious acts, never losing sight of the fact that they lie at the basis of all investigation. From these data the doctrines of the science are formed mainly through analysis and deduction. The faculties of the soul are pointed out, and the places of perception, memory and imagination, judgment and reason, are determined. Many of the best minds of past ages have studied these problems in this way, and our many systems of philosophy are the fruits of their labors.

The physiological psychology of to-day stands in sharp contrast with the method of the old psychology. It begins with experiment and induction, measuring psychical acts through their external manifestations. The intensity and variations of subjective phenomena are studied under definite conditions, and experiments are performed similar to those of other physical sciences.

It is not my purpose to enter into detail in describing these two types of psychological investigation, or to discuss the merits or defects of either method.

They both have been efficient means of advancing the knowledge of ourselves, and doubtless in the future will be still more efficient in enlarging our realm of accurate information of the mental activities. Nor must we think, because the self-psychology is old and the other method is new, that the latter will displace the former. Self-psychology is old merely because its truths were more manifest and more easily determined by self-examination, without those efficient aids which can be secured only after the physical sciences are well advanced. It has a legitimate field of its own, in which acute thinkers can yet find a worthy field for their efforts. Consciousness is the ultimate criterion of all subjective facts. The analysis of consciousness into its ultimate elements is now acknowledged to be a more difficult task than the early philosophers supposed, yet these difficulties are not insuperable obstacles to a further use of the old method. With the corrections to the results of simple inspection which physiological psychology can now give, there is no reason why the introspective method may not steadily advance the analysis of subjective states until their ultimate elements are reached.

We thus have two well recognized methods of advancing our knowledge of psychology, but in spite of the trained thinkers in both these schools of thinking the science remains in an imperfect condition. Surely some conditions of success must be lacking or the progress would have been greater. I feel that at least an important part of the missing elements lies in *race* or *economic psychology*; and until economic science is brought into closer relations with the other branches

of psychological study, there will still be missing the vital conditions necessary to scientific progress. I call the branch of psychology of which I shall speak *economic*, because its development is the result of the investigations of economists in dealing with the solution of problems in their own science. It is really a *race* psychology, because the more rapid progress of economics than of other branches of social study has centered in the literature of political economy the best fruits of all sociological investigation. Political economy is at present a complex science, which must in the end fall into many parts; but until this separation takes place, *race psychology* will be investigated and its principles explained by students of economic problems. They have the best material for its study, and are likely to be in the van of progress for a long time to come.

The psychology of which I speak can also be called a subjective psychology, because the phenomena to be investigated are mental and not physical. The subjective motives guiding men in their economic activities are of equal importance with the physical conditions that determine the production of commodities. In this way the study of economics has its subjective or psychological side, where the material is similar to that of introspective psychology, and its physical side, which resembles the data of the physiological psychologist.

An economist, therefore, must be an expert in the analysis of subjective as well as objective phenomena. He must, at the same time, be a physicist and a psychologist. It is noteworthy that the great economists have been men who have won laurels for themselves in both of these fields. They have had the education

and instincts of a philosopher, combined with a keen appreciation of the accurate methods of the more advanced sciences. I have only to mention the names of Hume, Adam Smith, and John Stuart Mill, to substantiate my claim that the economists have been deep thinkers in both mental and physical science.

Race psychology is not a new study, although the name has only recently come into use. The changes in our ways of thinking which a new science brings are slow, and we do not become conscious of them until the development is so great that we can no longer overlook the results which have come merely as a by-product of other investigations. Then we often see that what was regarded as secondary is really of prime importance, and that we must recast the elements of the science and make two independent studies of what was before regarded as a unit.

It is evident that Locke and Berkeley were exponents of a self-psychology. They began with ideas, and regarded consciousness as a series of simple subjective phenomena. Locke's two fundamental propositions are, that his own mind is the sole object of investigation, and that his attitude towards this object of his investigation is that of a mere observer. The elements of his thinking are all subjective, and his ideas are the passive results of unseen forces. From these premises we can know the objective world only through a process of reasoning. These ideas are all parts of ourselves—inner conditions which are states of the soul. Therefore, they cannot tell us directly of the objective world, nor of the influence which social ideas have in modifying the psychical characteristics of the race.

A social idea in this sense is a synthesis of elements through which force and vivacity are acquired. The simple ideas which Locke emphasizes must be associated with some of our feelings before they acquire the power to control our thinking and become vital forces through which our actions are regulated. Our habits, customs, and instincts are complex relations, resulting from the union of ideas with the feelings. Even our sensations are not simple units, but such a close union of ideas with our strongest feelings that the synthesis is complete and the association is inseparable. When these complex units which we call sensations once acquire a dominant place in our thinking, the attitude of the mind towards its contents is altered. We no longer think first in terms of simple ideas and then reason from them to external things, but we take our sensations as primary and picture an external world which impresses its sensations on us. We are now at the end of a series of manifestations, and not at the beginning, as is the case when we act on the premises of self-psychology.

By what steps does the individual mind pass from the position of regarding its ideas as the starting-point to the position of viewing the physical world as the beginning? Does the mind pass directly from one extreme position to the other or by an intermediate stage? It is evident that there is an intermediate stage, because we recognize a world of persons before we recognize a world of matter. We organize our ideas into groups of animate objects, and then at a subsequent stage of development we analyze these objects into their ultimate elements, and thus

have the material world. *Race psychology takes its rise as soon as we form concepts of living persons and think of the world in terms of social relations.*

This change from the premises of a self-psychology, where the world is a series of ideas, to the premises of a *race psychology*, shows itself first in Hume. While he is regarded as a follower of Locke and Berkeley, the breach between him and them is really more marked than is usually perceived. Locke in his philosophy had begun with ideas and their relations, making no use of the doctrine of the association of ideas in constructing his theory. Only the final chapter of his book on ideas treats of this important doctrine, and then in but a meagre and unsatisfactory way. In Hume, however, the association of ideas comes at the very beginning, and is put at the basis of all his reasoning. In his analysis of the powers of the mind all relations are made to depend upon fixed habits and associations. There is no other bond of unity between them. Hume speaks of this bond as a "gentle force" in distinction from the forces of the external world. The very term he uses—"association"—shows that he had social relations in mind, and that he was using an analogy when he speaks of the association of ideas. He regards the mental forces as similar to the bonds which hold the members of a society together. Social facts are thus put at the basis of Hume's system, and habits and association become the means of explaining mental acts.

I hope I have now made it clear that these are the three types of psychological investigation, or, perhaps it is better to say, the three stages of psychological

progress. In the first stages of mental development, we think of the world in its relation to us as a series of ideas, and from this concept we create a self-psychology. We next acquire the idea of other personalities, and, from the relations existing between groups of individuals, premises and ideas arise, out of which a race psychology is formed. We then analyze these bodies into their material elements and learn to regard the physical forces as primary. From this point of view the mind is a composite of the more elementary forces of nature, and must be explained through them. In a self-psychology the primary relation of ideas is that of succession. There is no recognized force which, uniting ideas into inseparable groups, can make personality an objective concept, thus placing other beings on an equality with self. In a race psychology the gradual synthesis of feelings with ideas destroys the serial concept of conscious phenomena, and creates the "gentle force" needed to compel the self to look upon the world as an aggregate of beings in social relations. Each self has the ideas, customs, and habits of society impressed upon it. Its social instincts become so firmly imbedded in its ways of thinking that it finally thinks of self only as an abstract idea. In physiological psychology ideas are also bound in groups, but the binding force is not the subjective feelings of men but the physical forces of nature. The elements of matter and the forces of nature are looked upon as the sole cause of mental phenomena. We thus acquire an idea of objective relations independent of the thinker.

The fact that Hume made impressions primary and

reduced ideas to a secondary place as copies, shows how completely he had deserted the self-psychology of Locke. While Locke makes clearness and distinctness the test of simple ideas, Hume gives the first place to those perceptions which enter the mind with the most force. With this standard the sensations are the most certain elements in the mind. Ideas associated with feelings get a secondary but no less important place, while the faint images of thinking and reasoning are merely the resultants of the more forcible impressions, to which they must correspond and exactly represent if the conclusions drawn from them are to have any validity. Clearness and distinctness thus give place to force and liveliness. With these opinions it is easy to see why Hume attached so much importance to the association of ideas. Associations are formed through the blending of ideas with feelings; and through this union enough force can be generated to place them on a level with physical sensations.

Had Hume proceeded positively from these premises he would have created a science of race psychology. He is not conscious, however, of this possibility, and passes so quickly from a social to a physical standpoint that the greater part of his work rests on the latter basis. His interest lay in metaphysics, and when he had used his premises in an attempt to refute the claims of his opponents, he rested satisfied with his work.

The negative results of Hume were followed by the German reaction led by Kant. Through him and his followers self-psychology regained its dominant place, and a new philosophy was developed out of the differences acquired directly from consciousness. The

introspective method was again used to study the judgment, the understanding and reason, as well as the distinctions between sensation, perception, memory, and the imagination.

The direct followers of Hume, however, continued to claim that the physical lay at the basis of the mental, and that ideas are not innate but have a history and a development. They have used the empirical method, and have emphasized the association of ideas as the leading principle of mental growth. The physiological psychology of to-day is the latest development of this school, and through its rapid progress of late many important inroads have been made into fields where it has always been assumed that introspective methods alone were applicable.

It is not with these two branches of psychology that our present interest lies, but in the development of a new type of psychological thinking growing out of the progress of political economy. The economists form the third group of psychologists which arose as a result of the criticisms of Hume. While Hume was no mean economist and his economic instincts and education had much influence on his philosophy, it was reserved for his great disciple—Adam Smith—consciously to apply his principles to economic affairs and to rear the first science based upon purely subjective phenomena.

Previous to Adam Smith political economy had made a start in France, but was treated there as a purely physical science. The Physiocrats, as these earlier investigators are called, were filled with the material notions which dominated French thinkers of that day, and were thus led into the error of supposing

that the physical environment of a nation fixed the conditions that determine the production of wealth. They maintained that the surplus which the members of society have to enjoy, comes entirely from the aid that nature gives to man in the production of wealth. They regarded the labor of men, especially in manufactures and commerce, as sterile. Such producers, they held, consume as much as they produce, leaving no surplus for public revenues or for the accumulation of capital. The soil, climate, and other natural advantages through which alone nature aids man in production, thus become the only sources of national prosperity.

This thoroughly physical conception of political economy was radically changed by Adam Smith through the introduction of the subjective elements which aid in the production of wealth. The action of the economic environment has gradually led to the acquisition of new instincts on the part of producers, through which the productive power of society is as much increased as through the aid which nature offers under the most favorable circumstances. The instinct to barter and trade causes the great commerce of modern times through which nations are bound together into a unit. The desire of intimate social relations checks the warlike spirit in men and creates a willingness to coöperate with others in production, the division of labor thus becomes possible, and modern production on a large scale can displace the less efficient household production. The desire for future welfare checks the waste of present resources and permits the accumulation of capital and the utilization of the more complex natural forces. The principle of self-interest leads

sellers to compete with one another, and thus reduces the market price of commodities to the cost of production. For this reason the benefits of improved production pass naturally into the possession of the consumers, and there is no need of governmental interferance to protect them from the extortions and combinations of dealers.

It is no wonder the introduction of these subjective elements into economic theories revolutionized public opinion in regard to the relation of the state to industry. The doctrines of Adam Smith swept away the many restrictions and obstacles to free commercial relations between states, and allowed industry to adjust itself to the natural conditions of each locality. For the first time statesmen saw that the motives, feelings, and instincts created by economic relations harmonized with the welfare of the nation and limited the functions of the state to a narrow field where the social instincts were not yet dominant.

Had the immediate successors of Adam Smith been influenced by the same instincts and ideas that prompted him, and had they followed the lines of investigation begun by him, the subjective nature of economic doctrine would have been clearly recognized and its psychical premises fully developed. The influence of the physical side of economic phenomena was, however, too strong to permit of further progress in this direction, and soon a strong reaction led by Ricardo set in, through which the physical conception of economic laws regained a dominant place. Subjective differences were neglected and all men were looked upon as being equals in productive power and as having the same

mental characteristics. This hypothesis allowed the elimination of the psychological aspects of social progress, and permitted the economists influenced by these ideas to confine their attention to differences in nature and to base all economic deductions upon these differences. A brilliant epoch in development of economic literature succeeded through this narrow and partially false conception of economic science, yet it turned the attention of economists from the psychical premises of the science, creating a dogmatic spirit through which a bitter conflict arose between economic doctrine as interpreted by the school of Ricardo and the feelings and sentiments of the public.

Although this physical conception of political economy won to its side most of the leading economists of the first half of this century, it always had energetic opponents even in England. It was in Germany, however, where the reaction became most prominent and crystalized into a new school which rejected the method and many of the principles of Ricardo. Man and not nature was made the center point of the new science, which was historical in its character and inductive in its method. In this way the subjective side of economics again became prominent, and investigations were begun which threw light upon the psychical premises of the science. A proper use of history cannot fail to show the gradual change in the character of the motives, instincts, and customs which determine economic action and the controlling influence which these subjective elements acquire in a civilized society. Men learn to adjust nature to themselves as well as to adjust themselves to nature.

While the historical school of economists in Germany gave a renewed emphasis to psychological studies, they did not give these studies that prominence which they have recently obtained. It demands men of a deductive type of thinking to grasp the ultimate principles and to make the deductions which naturally follow from them. This task fell to Menger of Austria and Jevons of England. From them two independent movements have arisen, through which many radical alterations have been made in economic doctrines and in the manner in which they are studied. The principle of utility has been made a vital part of political economy, and the law of marginal utility has been shown to lie at the basis of the theory of value. In this manner, largely through the efforts of the Austrian economists, a subjective economy has again been reared which has fair prospects of displacing many of the theories of the Ricardian school.

An even more radical break from the physical theories of the past has been made by students of the consumption of wealth.[1] The old school of economists placed their emphasis upon the production of wealth, and regarded the laws of its consumption as outside of the realm of the science. These laws were held to be merely the laws of human enjoyment, and hence a part of psychology rather than of economics. But psychologists neglected to develop this field, which was properly their own, and economists were compelled to investigate it in order to understand the influence that changes in consumption had upon the phenomena

[1] See Patten—*The Theory of Dynamic Economics.* Publications of the University of Pennsylvania, No. 11.

of wealth. In this way a series of important psychological principles has been brought to light, the instincts, habits, and appetites of men have been more carefully observed, and the dependence of social progress on the reduction of appetites and on an increased variety in consumption has been fully demonstrated. An investigation of the mechanism of the standard of life has also shown how a higher standard can be obtained only through gradual changes in psychical premises of the race.

Another class of social studies closely related to economics deserves mention in this connection.[1] The steadily increasing interest in sociology has attracted many careful students to its realm, and they have done much to promote psychological investigations. The comparative study of the different races shows that the motives that lead men to form themselves into groups for common ends are of a subjective nature and can be discovered only through a more thorough knowledge of race psychology.

It will thus be seen that social, and especially economic, studies afford excellent opportunities for the investigation of practical psychological problems. The most important of our instincts and habits are due to the social conditions under which the race has developed and to the economic environment that has fixed the intensity of our appetites and passions. If we compare a race of primitive men with the most advanced representatives of our present civilization, it will be seen that in the differences between the two are to be

[1] See Giddings—*Sociology as a University Study.* Political Science Quarterly, December, 1891.

found the most important qualities of mind in which an educator's interest lies. The goal of an educational system is to impress upon all the individuals of the race the mental qualities which are now found only in particular persons. The influence of heredity lies within the province of race psychology, and cannot be thoroughly understood until we perceive the vital connection between economic phenomena and the acquisition of new instincts and habits through which the wants of individuals are more fully supplied. Every new desire for economic goods causes a readjustment of mental phenomena and the strengthening or weakening of some of the instincts that control our actions. A new psychology may be said to come to a race with each radical change in its environment.

A successful teacher must also understand the social condition of the community in which he lives. A large part of the differences between the various classes in society is of a psychological character. The children taken from school at an early age to enter manual occupations usually differ from the more fortunate children, not merely in wealth but also in mental qualities. They are more instinctive in thinking and more impulsive in their character. We are losing many of the best opportunities to eradicate the social differences through the ignorance of teachers of the psychological differences which the struggle for wealth has produced. To treat as equals children of radically different mental qualities means that the weaker lose the very instruction which would most efficiently aid in their progress.

I have planned this paper in the hope of showing

the importance of economic studies, and thus of race psychology to those who are preparing for teaching. Without asserting too strongly that the work in psychology which students of education receive is inadequate, it can at least be claimed that one important part is neglected. Race psychology demands an equal place with either physiological or self psychology. In which of these fields the student should begin must depend upon the qualities of his mind and his logical inclinations, but it is safe to say that a large number of students would find social studies attractive to whom the current psychology has no charm. All students would be benefited by its study, and would get from it the chief source of their inspiration. Social studies make us realize the meaning of our civilization and the significance of the problems of progress. They alone fill us with enthusiasm for social regeneration and create the sympathies needed for a life of self-sacrifice. High ideals are as important to the teacher as technical knowledge, and his enthusiasm is as valuable as his pedagogical skill. Whoever would combine in himself all these qualities, and desires to be a leader in the educational world, will have cause to regret if he does not make himself familiar with the social sciences and get the light they can throw upon moral and educational problems.

II.

GEOGRAPHICAL ILLUSTRATIONS.

By William Morris Davis, Professor of Physical Geography in Harvard University.

INTRODUCTION.

The descriptive geography of a region gives us an account of its various parts, such as rivers, valleys, hills, and mountains, independently of one another, except as to relative position. It deals largely with statistics of length, height, and area. It tells of the place, size, and business of cities and states in its more political chapters.

Physical geography deals with the same subjects, but seeks to consider them in their natural relations. It recognizes that the surface of the earth has been fashioned by natural processes, and that it now stands in a transient stage between its past and its future. It perceives that certain features of the surface are newly made, and that others are the product of long-continued processes; and in this difference it finds useful means of giving reasonable understanding to the subject. It includes a consideration of the occupation of the earth by man as one of the most interesting chapters in natural history, and it therefore takes particular care to distinguish those conditions which determine man's settlement and occupation.

A subject so comprehensive as this must needs be treated in a carefully chosen and systematic order, if confusion is to be avoided; and I therefore introduce in brief form a statement of the scheme under which the various parts of the land are, to my mind, most simply placed in their natural relationships, and thus most conveniently grouped for study.

It is well understood that every part of the surface of the land has a form dependent on the interaction of two kinds of forces, the one constructive, the other destructive. It is, therefore, important to begin with a conception of land forms such as they would be if determined by constructive processes alone. The accumulation of a sand dune is a minute example of such a process; the heaping of a terminal glacial moraine is another; the heaping of a volcanic cone is a much larger example; the uplift of a broad plateau involves an enormous mass of earth crust; and the crushing together and uprising of a mountain range give us the climax of these constructive operations.

As soon as land form is thus constructed, the destructive processes of the atmosphere attack its surface. The waste thus produced creeps and washes down the slopes, and the streams and rivers then carry it to its goal in the sea. Time is so long that even the loftiest constructional forms must in this way be reduced to lowlands, if the destructive processes go on without hindrance or interruption; and between the constructive beginning and the far distant completion of the destructive denudation, there is a whole sequence of forms to which the adjectives young, adolescent, mature, and old apply most appropriately.

When their meaning is once perceived, the student will not willingly give up their use.

The succession of features attained by any land area will depend, then, in the first place, on its initial constructional forms: it may begin as an even plateau surface, as a volcanic cone, or as a series of mountain ridges. The features will depend, in the second place, on the degree of advance made by the destructive forces in wearing away all that part of the mass which stands above sea-level, or above "baselevel," as it is more conveniently expressed. An adolescent plateau is different from an adolescent mountain range; an adolescent plateau is also different from an old plateau.

A similar plan may be followed in considering the features of coast lines. When a change in the relative attitude of the land and sea brings the waters to reside at a new level, the outline of the coast may be called constructional. As long as the land stands still, the littoral waves and currents work upon it and effect progressive transformation of its outline, thus carrying it through successive stages that may be called young, adolescent, and mature as before.

There are two qualifications of this scheme which must be noticed, rather to avoid misapprehension than to present the scheme completely. The first is that the destructive processes do not hold back their attack until the constructive processes have completed their work. Destructive denudation begins as soon as any part of a land mass rises above sea-level. If the constructive processes are relatively slow, a considerable advance may be made by the destructive processes

before construction ceases; but as far as the facts are now understood, the greater part of the task that is set before the latter still remains undone after the former have completed their work. It is, therefore, fair in a general way to separate with some distinctness the two stages, constructive and destructive, in the history of any land area.

The second qualification is that we need not imagine every constructed land area to stand still, suffering continually from the destructive forces until it is completely denuded to baselevel. If no disturbance took place, the time required for complete denudation would be called a complete geographical cycle. But a renewal of constructive upheavals or deformations may be introduced at any stage in the destructive development of a land mass. The forms then reached by the constructive and destructive processes of the first incomplete cycle serve as the constructional or initial forms of the new cycle, and from this beginning the destructive forces then proceed again. Thus land areas frequently present what may be called composite topographic forms, part of the surface having been shaped during an earlier cycle of destructive development, and another part being the work of later destructive work while the land mass stood at a different attitude with respect to baselevel. The discrimination of the different parts of a composite landscape affords one of the most interesting tasks that a geographer can undertake. Composite topography is illustrated in great variety and with surprising distinctness in New England.

It is manifest that the study of physical geography

on such a scheme as this implies an understanding of physical geology. There can be no question that this is essential for any proper advance to a good treatment of the subject. Indeed, I believe that the chief cause of the slow progress of physical geography in the text-books and in the schools is due to the weakness or absence of this fundamental subject. No great amount of study is needed for its acquisition; nothing need be said about fossils or about the ages of the world; but the general principles of changes of level, deformation, volcanic action, and especially of denudation, must be clearly in the mind of every teacher who would gain a rational understanding of physical geography.

Let us take southern New England as a field in which to look for illustrations of a systematic method of treating physical geography.

THE PHYSICAL FEATURES OF SOUTHERN NEW ENGLAND.

On ascending to the summit of any of the hills in southern New England, the most characteristic feature of the view is the comparative evenness of the horizon line. From one upland to the next there is small change of height. The successive uplands are more or less widely separated by valleys, like those of the Blackstone or of the Connecticut, which are sunk beneath the general upland level; and occasional mountain-like eminences rise above the general upland surface, as the Blue Hills, Wachusett, and Monadnock. But both the valleys and the mountains are only local departures from the relatively continuous upland sur-

face. The truth of this is not so well perceived in south-eastern New England as when one goes further north and west, where the upland gradually ascends to greater height, as if it were a gently inclined plain. On the Berkshire plateau, for example, the rolling upland is the dominating feature of the country. The higher mountains are merely elevations above it. The valleys are merely incisions below it.

Rhode Island lies in the southern part of this slanting upland, with a great indentation of its coast line forming Narragansett Bay. Our attention to-day will be turned particularly towards Rhode Island,—first, because we meet within its limits; second, because this state has been so well mapped, and its map is now so widely distributed to its schools and libraries.[1] Massachusetts has a similar map in many separate sheets.[2] Connecticut is surveyed, but the maps are not yet published.

In what order shall we consider the smaller topographic forms by which the larger features of the region are diversified? The natural order for their consideration would be that of their development, but the simpler order for our use is the reverse of this; and in the following description I shall begin with the very youngest of the minor features of Rhode Island, and follow backward to the older ones, coming finally to the plateau itself.

[1] Topographical map of the state of Rhode Island, by the U. S. Geological Survey in coöperation with the state. 1891. For sale by J. C. Thompson, 269 Westminster street, Providence, R. I. Continual reference should be made by the reader to this map.

[2] Topographical Atlas of Massachusetts, published by the State.

THE SAND BARS AND CLIFFS OF THE COAST LINE.

Along the southern coast of the state there are numerous sand bars swinging from headland to headland in long curves concave to the ocean.[1] The two bays known as branches of Westport river, a little east of the Rhode Island border, are enclosed by such a bar. Sachuest Island is attached to Aquidneck Island by a pair of such bars, enclosing a small lagoon between them. Westward from Point Judith the comparatively simple outline of the coast depends almost entirely on the sand bars, behind which a number of ponds and salt marshes are held back against the irregular margin of the mainland. These bars are all a product of work by the sea-shore waves. Their material comes, in part, from the shallow bottom of the ocean, close to the shore, where the sands are scoured up and carried into still shallower water; and, in part, from the headlands that receive the stronger beating of the waves, and are thus cut away backwards, the material taken from them being washed along shore in one direction or the other. Inasmuch as the great volume of littoral water moved by the waves and currents cannot swing around the sharper corners of the coast, but prefers to move in long sweeping curves, the growth of the sand bars is so ordered as to produce a smoother outline than that of the coast on which the waves first beat; the headlands are somewhat worn back into cliffs, while sand bars are built across the

[1] This part of the address was illustrated by a generalized bird's-eye view of the state of Rhode Island, drawn roughly in colored chalks on a blackboard.

bays, thus tending to simplify the coast line from its original inequality: the change thus far made is of moderate amount; it is an adolescent coast line.

In Rhode Island the sand bars are of but moderate size, but they deserve our careful attention, first, because of their existence here in so characteristic a development, and secondly, because, by means of their occurrence here on a small scale, we can best appreciate their occurrence elsewhere on a much larger scale.

Just as the bays of Westport river are enclosed by a curved bar, built from the headland on the west, so the harbor of Duluth is shut in from the main water body of Lake Superior by a bar springing from the north shore; so the Kurish harbor of the Baltic is cut off from the parent sea by a sand bar, but the last is perhaps thirty times the size of the first. Just as the little Sachuest Island is attached by a pair of sand bars to the larger Aquidneck Island, which serves it as the mainland, so the once isolated rock of Gibraltar has been welded to the mainland of Spain by a low strip of sand; and the English occupants of the Rock know very well that the difficulty of its fortification is thereby greatly increased. Without the sand, it could be attacked only from the sea, but now it may be attacked by land.

A larger instance of the same kind is found in the attachment of the rugged island on which Cape Town, Table Mountain, and the Cape of Good Hope are situated, to the mainland of Africa. But perhaps the most interesting of all instances of this sort is seen in the Island of Ceylon; here the shifting currents, drifted

one way and the other by the shifting monsoon winds, alternately build a bar from the southern and from the northern points of the island toward the mainland of India. There is no thoroughfare for vessels behind Ceylon. The southern of the bars is already built up close to sea-level, and has become the site of active coral growth. In some places the sands surmount the waves and form an almost continuous pathway from India to Ceylon. It has the name of "Adam's Bridge," being connected by local story with the traditional father of our race. The northern bar is not so far advanced as the southern, but its successful beginning is clearly shown by soundings. It needs but a short glance into the geographical future to see the time when the two bars will be wholly completed, and the enclosed bay will be the perfect analogue of the little lagoon behind Sachuest Island. How greatly is pleasure stimulated and rational memory aided by comparisons of this kind! How useful that insignificant little Sachuest Island becomes when it is seen to be a small member of a large family with relatives all around the world!

The long bars which shut up the ponds west of Point Judith may be closely compared with the great series of sand bars that skirt the southern coast of Long Island, and that may be followed, with little interruption, from New Jersey all along our Atlantic and the Gulf coast, even to Mexico. In many cases, however, the bars along the southern Atlantic coast are not attached to the mainland at either end, and must therefore be regarded as the product only of scouring from the shallow sea bottom. The sand bars of New Jersey have a large population of summer visitors, who

fly from the heat of the interior cities to the cool sea breezes on the shore.[1]

Albemarle and Pamplico Sounds, enclosed by extensive off-shore sand bars, are hardly more than larger examples of the little ponds behind the bars of Point Judith. Capes Hatteras, Lookout, and Fear are cusps of sand, formed where the ends of adjacent bars, concave to the ocean, unite and point out to seaward; lightships are anchored off the coast where the sands are drifted out from the cusps, forming dangerous shoals. The southern coast of Texas possesses, in Padre Island, one of the longest sand bars in the world. Beautiful illustrations of all these examples on our own coast may be had at very moderate cost in the charts published by the U. S. Coast Survey. Their average price is fifty cents each.[2] If the school board cannot provide these for class use, let each class contribute to a fund sufficient to buy one or two charts in a year; or let some local benefactor of the school lavish a few dollars a year for the increase of this kind of illustration. It may be added that the illustrated catalogue of the charts published by the Coast Survey may be had by any responsible person, free of charge, on application to the Superintendent at Washington.

The cliffs that have been cut on the headlands from which the sand bars of Rhode Island are hung, attain

[1] Sample sheets of the topographical atlas of New Jersey were exhibited in illustration of these features. The sheets may be obtained singly for twenty-five cents and postage; or the entire atlas of twenty sheets for five dollars, from the Geological Survey of New Jersey, Trenton, N. J.

[2] Several charts of this series were exhibited during the lecture.

no great magnitude in this little state, yet they may serve to introduce cliffs of greater height in other parts of the world. The chalk cliffs of southern England, visible from the opposite shore of France, gave the name of Albion to our forefathers' land. The cliffs of western Ireland and Scotland, and of the Shetland and Orkney Islands, are only larger examples of coast action. Here the great waves, driven on the coast by the westerly winds of the stormy north Atlantic, have cut away miles of land and carved out sea cliffs that have no rival on our windward coast of the same ocean. Many a wreck attests the dangers of these rock-bound coasts; many an English story turns on their headlands and bays.

In order to emphasize the fact that the cliffs are made by cutting back the headlands, and that the bars have been thrown across the inlets in the progressive simplification of the coast line, we should draw a sketch map, from which the bars are omitted, and on which the headlands are built out to sea again, restoring something of their former extension.[1] The shore line would then have more nearly the form that it possessed when the sea first came to lie upon it, and in this simple manner a lesson may be given of the changes promoted by the sea, as it beats on the land. The partial simplification already reached in the adolescent coast line of Rhode Island must come to be even more advanced in future, when the greater headlands are pushed further back, and when the larger bays are at last enclosed.

[1] The blackboard sketch mentioned in a previous note was, at this point, modified to illustrate such a change.

The future coast of Rhode Island is already realized in the almost mature features of the greatly simplified coast line of eastern Maryland. Here the ocean sees no vestige of any original irregularity in the shore line; the sea margin is reduced to an even line by cutting off the headlands and building the bars. When the cliffs and bars are pushed further in by the advance of the consuming waves, and the lagoons that now lie behind the bars are destroyed, the coast may be called fully mature. The successful development of an adolescent or sub-mature coast line is also beautifully shown on the sandy southern coast of Martha's Vineyard, where the originally ragged headlands have been snubbed back into a line of low cliffs, perfectly continuous east and west with that of the bars which have converted the heads of the former bays into ponds. It is noteworthy that both of these sub-mature coasts are carved on lands of weak materials, where the development of a mature outline has been relatively rapid. Such maturity is seldom discoverable on rocky coasts; and hence we may infer that the land does not stand still long enough for a great piece of work to be effected by the sea on a resistant coast at a single level.

It ought to be said here, that, in telling about changes of the coast line in the preceding paragraphs, and about other changes in the pages that follow, it is not the intention simply to inform our pupils about what the land about us has been and will be, but rather to impress upon them the real meaning of the land as it is now, and to reveal to them the natural relationships that exist between our home dis-

trict and various other parts of the world that are like or unlike to it. It is not so important simply to know that the headland of Point Judith once extended farther out to sea, as it is to appreciate the bearing of this local fact on the characteristics of various coast lines that are in different stages of development. Thus understood, the study of geographic development is as important in guiding us to a true classification of geographical forms as the study of biological development is in leading to the natural classification of organic forms.

FEATURES DEPENDENT ON GLACIAL ACTION.

Leaving now the coast for a time and passing inland, the youngest features of the land are found in the swampy fillings of various hollows that not long ago held clear ponds of water. These are very numerous in certain parts of the state. Closely associated with the filling of former ponds by swamp growth on their bottom, is the progressive deepening of their outlets through gravel beds along the stream courses, whereby the former water level has been lowered. The occurrence of marshes should probably be ascribed somewhat more to the latter than to the former of these processes. Sweep out the marshy deposits, fill up the channels now cut through the terraced gravel beds along the outlets, and many a marsh would become a pond, and many a pond would be larger and deeper than it is now. Ponds are still plentiful in Rhode Island, but not so plentiful as they were a little earlier in the development of the state. When the shore line possessed its original irregularity, the ponds

of the state probably existed in two or three times their present number and volume.

The gravel and sand taken away by the streams in deepening the outlets of the ponds would have served to form deltas of appreciable size where the streams flow into Narragansett Bay, were it not that no waste of the land has been able to pass below the lowest surviving pond on each stream. Every pond acts like a filter to the stream that enters it; hence the greater part of the sand and gravel taken out of the valleys by the streams have not reached the bay, but have stopped on the way. If the streams had united into a large river, a delta might have been already formed at its mouth; but none of the rivers entering the bay are of even medium size. If the streams, even with their present small size, had worked a long time, the land standing still all the time, then we should find deltas well advanced: but we are already persuaded that only a moderate time has been spent by the sea on its present shore line; hence it is natural that the little rivers have not yet made significant deltas; nearly all the streams are still in the estuarial stage of their existence.

The Thames, the Connecticut, the Hudson, the Delaware, the Susquehanna, the Potomac, and many other rivers of our Atlantic slope are like the little streams of Narragansett Bay in this respect. The absence of deltas at their mouths is in part due to the scouring action of the tides, but it must be in much greater part explained as a consequence of the brief residence of the sea at its present level on the land slope. The rivers themselves are quite old enough to

have deltas, but the present positions of their mouths have been so lately determined, either by a rising or a sinking of the land with relation to the sea, that no deltas have yet been made in the present cycle of shore development.

In this connection, we may use the principle of contrast as well as that of likeness in extending our study from Rhode Island to other parts of the world. The very absence of deltas at the mouths of our New England rivers leads by contrast to the mention of the magnificent delta at the mouth of the Mississippi. The delta is well known; perhaps it is not equally well known that the superbly engraved chart of the delta may be had of the United States Coast Survey for a merely nominal cost.

The origin of the ponds and of various features associated with them is a matter of much more importance than it would at first appear to be, and this study will lead us to the consideration of many other matters. Westward from Point Judith we find a range of gravel hills, extremely irregular in shape, and equally irregular in materials. They are built up of loose rock of all grades of texture, from fine sand to great boulders, commonly known as *drift*. The material is tumultuously strewn about, as if it had been laid in a very disorderly fashion upon a rock foundation below. Irregular gravel hills and broad deposits of washed sand are very common all over Rhode Island, and indeed all over New England.

If all these loose, superficial deposits of drift were removed, several significant changes wonld be made in the form and outline of the state. In the first place,

the waters of the sea would advance over the places now occupied by the gravel hills west of Point Judith; the shore line would be found somewhere north of the present course of Pawcatuck river. The ponds and the marshes that now lie behind the gravel hills would then be the marginal part of the ocean, and Rhode Island would be shorn of a considerable fraction of its small area. The several head branches of the Pawcatuck, now flowing southward to join the main stream where it turns west through the ponds and marshes, would then have entered the sea independently as so many separate little rivers. We are familiar with slight artificial additions to land areas in building wharfs, or, on a larger scale, in filling in the back bay at Boston; but the wholesale addition of many square miles to the area of a state by building its surface out into the sea is certainly a novelty.

Surface deposits of sand and gravel drift have been described as widely extended over all parts of the state. Every traveller by road or by rail has seen them. They occur particularly in the valleys, where they have, over and over again, effectively obstructed the course of streams, holding them back in ponds, turning them aside from their former courses so that they must flow over rocks and ledges, from which they now descend in cascades and waterfalls.[1] Evidently the state would be vastly changed if all these loose

[1] Two paper relief maps were shown in explanation of the contrast between normal drainage by uninterrupted streams, and imperfect drainage by streams obstructed by drift and held back in ponds: the first typifying the present drainage of North Carolina or the former drainage of New England; the second typifying the present drainage of New England, Canada, Finland, and similar lacustrine regions.

gravels were stripped from its surface and returned to the hills and ledges whence they have been dragged away. There would be no marshes or ponds; there would be no waterfalls; the streams would be greatly re-arranged from their present courses; the sea would reach farther inland than it does now at many points.

This extraordinary work of strewing the state with sands and gravels was accomplished during the time when Rhode Island, and indeed all of New England and the greater part of the northern United States, were deeply sheeted over by a covering of ice such as is now seen in Greenland. The present physical features of Greenland are therefore of particular interest to the student of New England's form. The inland ice sheet of that Arctic land has lately been visited by several explorers, notably by Nansen,[1] and their accounts of its monotonous, barren, almost level surface gain an especial value when it is understood that New England was lately—in a geographical sense—sheeted over by a similar plain of ice and snow. I cannot here stop to consider the many lines of logical evidence by which this remarkable conclusion is supported, but I desire to call particular attention to it as an essential element in the description of the present physical features of our states. Whatever the cause that brought this singular invader down upon us from the north, there is no reasonable doubt that it came. It crept slowly along, weighing heavily on the ground below, dragging along all the loose soil that it found ready made on the land, and

[1] Since this address was delivered, we have news of Peary's success in penetrating northern Greenland.

detaching many a boulder from projecting ledges. It gradually rounded off the minor asperities of the hills and slopes; it deepened the valley troughs along which it flowed: but while these changes were of significant value, they must not be exaggerated. Glacial erosion nowhere reached the excessive measures that were allowed it twenty or thirty years ago. The heavy ice sheet, pressing down on the rock over which it slowly crept, acted after the manner of a great rasp, gradually rubbing down the minor inequalities of the surface. A considerable volume of loose material was successively dragged or carried along by the ice, or washed along by the numerous streams that flowed along beneath it; and thus heavy and irregular accumulations of land-waste were formed along the lines maintained by the ice front for any considerable time. Such deposits are called terminal moraines.

The range of irregular hills near the coast westward from Point Judith, affords one of the best illustrations of this type of land form that is to be found in the country; it is clearly portrayed on the contour map of the state, and being easily reached, it should come to be a type of terminal moraines in our teaching. It may be traced westward, crossing Long Island Sound by Fisher's Island, running along the backbone of Long Island itself, and forming the Narrows by which the lower and upper harbors of New York city are separated. Its course may then be followed more or less distinctly through New Jersey, Pennsylvania, and further west, even beyond Minnesota into Canada.

Southward and eastward from Rhode Island, a series of morainic hills is found on Block Island, Martha's

Vineyard, and Nantucket, on the Elizabeth Islands of Massachusetts, and along the curved arm of Cape Cod. A considerable extent of land has thus been added to the south-eastern part of the old Bay State. While we cannot at present accurately define the relations of these morainic belts, yet it may be safely asserted that all of them were deposited after one or another of the onward movements of the ancient ice sheet. They are all of one pattern, and better deserve recognition than the little sand dunes on our larger coastal bars. And yet it is more usual to hear in our geographies of sand dunes than of drift moraines. The former are the more important in the remote Sahara; the latter are more important at home.

Most of the drift beneath the ice sheet was not brought all the way to the margin of the ice. It still remains spread over the country north of the moraines. Much of it is firmly compacted, as if by gradual accumulation under the pressure of the heavy ice sheet that dragged over it. Sometimes it locally forms long hills with a thickness of fifty, a hundred, or more feet: its surface outline then flows in long, smooth curves. These hills characterize Aquidneck Island, north of Newport, where the gentle modulation of the landscape is almost wholly the product of creeping ice. Similar hills often attain a greater development further inland, rising to summits of one or two hundred feet in height, with an oval outline of half a mile, more or less, in length, and an average ratio of perhaps three to one between the longer and shorter axes of the base. Hills of this nature are now commonly known by the name of drumlins, a term imported especially from

Ireland, where it was first applied to drift masses of this kind. Drumlins are easily recognized by their smooth, convex outline, and often by their being cleared of trees and used for farming in preference to the much more rugged and ledgy hills on either side. The absence of gulleys on their slopes assures us that denudation has as yet effected but little change in their original constructional form. The same lesson is taught by the unfilled hollows among the hills of the moraines. The glacial drift has therefore been lately laid upon our land: its forms have advanced but little in their cycle of destructive development. They are very young. It is only where active streams run across them that they are significantly altered.

The drumlins in the neighborhood of Boston constitute striking features in the landscape. One of the best marked is known as Corey's Hill, in Brookline, a conspicuous object in the view south-westward across the Charles River from Cambridge. Other hills of even greater height occur in Chelsea and beyond. Many of the drumlins on the coast have been cut back into sea cliffs, such as those of Grover's Head and Winthrop Head, north of Boston. Some of the drumlin islands in Boston Harbor are tied to the mainland by long sand bars, as at Nantasket. Further inland, remarkable groups of drumlins are seen about Pomfret, in north-eastern Connecticut, and in the upland district between Charlton and Spencer, where the Boston and Albany Railroad reaches its highest elevation between Worcester and Springfield. If we had volcanoes in New England, what geographer would fail to mention them? Drumlins are as peculiar and as

easily recognized as volcanoes; they may be counted by the hundreds: should we not therefore give them some attention in our elementary teaching?

Returning to Rhode Island again, we may briefly consider those loosely compacted glacial sands and gravels, frequently with a more or less even upper surface, whose deposit is associated with the closing stages of the ice period. Among the most important of these are the deposits of sand and gravel that are washed down the larger valleys. Rhode Island contains no conspicuous example of this class, but the Merrimack valley in New Hampshire and the northern Connecticut valley are greatly clogged in this way; and it is in these deposits that the subsequent channelling of the rivers has formed the terraces for which the valleys are so well known. It is evident that these are dependent on the presence of large rivers, draining a considerable area of back country; and that condition was not fulfilled in Rhode Island. Smaller examples of a similar process are, however, abundantly represented here.

When a favorable climatic change began to melt away the ice sheet faster than it was supplied by creeping southward from its northern source, it must finally have lost that measure of thickness that enabled it to move, and thereafter it must have lain as a stagnant sheet of ice, slowly decaying away. The decaying ice probably lingered longest in the valleys where it was thickest, and beds of sand and gravel were washed around its remnant blocks by the streams from the rainfall, as well as from the slow melting away of the ice. These gravel beds often form plains of half a

square mile in area, and sometimes give names to villages built upon them, as Jamaica Plain, near Boston. The plains make smooth fields for cultivation, and the rich farm gardens of Arlington and Winchester, north of Boston, are thus located. Larger examples of similar plains are found in the broad expanse of sands southwest of Providence, and in the even more extended plains of the southern half of Cape Cod. The latter were formed by the overwash adjacent to the ice sheet, when it was making the terminal moraine of the Cape, just as the little plains by Arlington and Winchester were overwashed surfaces adjacent to the decaying ice blocks. These plains have an interest, not only from their curious origin, and from their relation to our occupation of the surface, but also because they are, with the salt marshes, the only examples of true plains in New England; it is only on their even surface, however limited, that we can here give our school children an idea of the extraordinary flatness of the marine plains of the south Atlantic states, or of the lacustrine plains in the west.

The association of ponds with the smaller plains of sand and gravel is very common in southern New England. While the last blocks of ice remained, their place was held free from gravel; when the ice-blocks melted, their place was taken by water. The greatest number of our ponds originated in this way, and not by glacial excavations of their basins.

On the final disappearance of the ice, the valleys of pre-glacial time were irregularly clogged by the rubbish that had been dragged and washed about. The effect of the terminal moraine on the course of the Pawca-

tuck river, has already been mentioned. If it were not for the gravel hills on the southern side of the river, its waters would not be turned past Westerly, and that active city would be less favorably situated. Another more striking case may be mentioned in the falls of the Blackstone river, by which the growth of Pawtucket and so many other manufacturing villages has been determined. This little river, attempting to take possession again of its valley, after the evacuation of the country by the ice sheet, found its former course so well hidden by sand and gravel rubbish that it frequently lost its way; it departed irregularly from its valley line, and here and there took a course that led it across rocky ledges. The loose gravel, down stream from any ledge, is soon cut down nearly to the level of the next ledge below, but the channel of the stream above the ledge cannot be deepened until the ledge itself is cut through. Thus the stream is characterized by a succession of almost level reaches enclosed by gravel terraces, and short rapids over rocky ledges. At the latter, dams have been built, and factory villages have sprung up.[1]

One of the best instances of this kind is found just across the border of Rhode Island, in the busy city of Fall River. Here the waters from Wautuppa pond turn westward across a slight depression in the

[1] The succession of events here summarized was more fully illustrated by a series of three paper relief maps; the first indicated the form of a normal valley, with the stream flowing along the axial line between rocky slopes; the second showed the effect of clogging the valley with an excess of sand and gravel, filling up its trough to a considerable depth; the third presented the existing condition of our streams, with drift terraces and waterfalls.

enclosing hills, and descend rapidly to the Taunton river. Mills were early established on this water power, and the situation has proved so favorable, by reason of being on tide-water, that their number has now increased far beyond the capacity of the original falls. The chief occupation of the city, therefore, was determined by the overflow of Wautuppa pond across the hills. Now, on looking at this pond, it is clearly seen to extend southward, directly towards the west branch of the (so-called) Westport river, already mentioned as a bay enclosed by a bar. The divide between the pond and the bay is composed of glacial drift. Remove this obstacle, and Wautuppa pond would be drained; and along its bottom Wautuppa brook, as we might call it, would flow southward into what might then be called Wautuppa Bay. If the overflow of the pond were returned from its present accidental transverse outlet to a more normal former escape by a longitudinal valley, Fall River would have no excuse for being. We must, therefore, ascribe to glacial accidents not only the existence of ponds, and the diversion of rivers from their former courses, but also a considerable influence on the industrial development of New England.

On the Merrimack river we find Manchester, Lowell, and Lawrence, all similarly located at water powers. When the ice sheet melted away, the valley was clogged with the excess of gravel and sand that was washed into it. And now that the river is cutting its way again through this clogging of gravel, it has here and there lost its old course, and run astride of a ledge of rocks. At every such point, a fall of greater or less height is developed, and there a city springs up. In

the case of Lowell this is particularly interesting, because it is, in fact, a city built to order. Seventy years ago its site was occupied by country farms. The value of the water power was perceived by some far-sighted engineers and capitalists; they bought up the land, dammed the river, cut canals to lead the water to convenient factory sites, and to-day we see there a city of many thousand inhabitants.

On the Connecticut river we have, at Turner's Falls and at Holyoke, repetitions of the same significant relation. Every factory village situated on a New England stream is an instance of the same relation between human and glacial history, and I find in this alone an ample justification for including some mention of the ice sheet that once overcame us in the discussion of our physical geography. It is not enough to say that these cities are built at falls in their rivers; we must know why there are falls, and this cannot be known without considering the action of the ice sheet.

Let us now, as in the case of the sand bars and the shore cliffs, attempt to put the glacial drift back on the hillsides whence it was derived, and restore something of the picture of the country in the time before the ice. There are two ways of doing this. In one way we estimate the amount of drift lying over the country, and try to carry it back to the sources from which its rocks were derived, thus deepening the valleys in which the drift was generally left, and increasing by a moderate measure the height of the uplands from which much of the drift came. Another, and perhaps better, method of gaining illustration of the condition of the country before the ice came, is found by travelling southward

beyond the terminal moraine, where it crosses New Jersey and Pennsylvania. Here we may realize a matter that might at first escape our attention in the other picture, namely, the complete absence of ponds and lakes in the regions not visited by the ice. The contrast between the lacustrine drainage of New England, Canada, or Minnesota, and the entire absence of lakes in such southern states as Kentucky, Tennessee, and the Carolinas, is entirely dependent on the recent glacial invasion of the former, and the freedom from glacial action in the latter. The same contrast may be drawn between Scandinavia, Finland, and Scotland, on the one hand, and central Germany, France, and southern England on the other, and for the same reason.

We must be careful, therefore, in restoring pre-glacial New England, to let all our streams flow without interruption and run in a continuous current from their source to the sea. We must, moreover, shift a number of the streams from their present accidental or transverse courses into a direction more accordant with the general northerly trend of the hills and valleys; as, for example, in the change from the present westward overflow from Wautuppa pond to the former southward flow of our hypothetical Wautuppa brook. The eastward flow of Pawtuxet river doubtless needs similar correction, and many of its headwaters may have flowed formerly directly southward to the sea. While we cannot make any perfect restoration of the preglacial aspect of the country, we can at least gain a good idea of the character of the changes by which the present country would be reduced to its former state,

and from this we can gain a better appreciation of the features of the country as they now exist, and of their difference from those of the states south of the glaciated area.

THE VALLEYS OF THE UPLAND.

Although the minor features of the present time differ in several respects from those of preglacial New England, the general plateau-like upland and the valleys which dissect it had then, essentially, the same forms as now. Our next inquiry concerns the origin of the valleys themselves. Most of these valleys follow the lines of weaker rock structures, leaving the harder rocks on either side to maintain the form of the plateau. The general relation of the smaller to the larger valleys, and of all to the southeastern slope of southern New England, leads us to believe that the valleys here, as in general elsewhere, are the product of the wasting of the land under the destructive forces of the atmosphere. Rocks become loosened into soil, the rain falling gathers into streams, and the streams cut channels and carry away the fine sediment washed into them from the decaying surfaces on either side. No limit of time is set to this process, and our best means of inferring some measure of the period that has been spent upon it is by the results that have been accomplished. If we follow up the valley of the Blackstone northward from the bay at Providence, or the valley of the Thames northward from the Sound at New London and Norwich, or that of the Housatonic, further west, into the interior of Connecticut, we must be convinced in every case that all these valleys were made by wash-

ing away the waste from the land surface, and that they have been made under the leadership of the streams that still flow through them, or, at least, under the leadership of the streams that flowed through them in pre-glacial times. It should not be inferred that the whole valley is in any case, here or elsewhere, made by the stream; the stream carries away the waste that is washed into it, but the wasting and widening of the valley sides is a process that has taken place outside the stream channel. Accepting this conclusion, let us consider for a moment what form the region had before the erosion of the valleys was begun.

If the valleys that dissect the plateau were filled up, we should find that the continuity of the upland surface would be much more marked than it is at present. This is manifest enough where the plateau is cut only by narrow valleys, as in western Massachusetts; but in certain parts of our region, the wasting away of the weaker rocks has destroyed so broad an area of the ancient upland that one may fairly be somewhat skeptical of its former existence there. In the neighborhood of Boston, for instance, the so-called Boston basin lies at a decidedly lower level than that of the uplands which enclose it on the north, west, and south; within the limits of the basin there is no trace of the upland. Again, the broad depression of Narragansett Bay constitutes an extended interruption of the continuity of the even uplands on either side. Still more does the Connecticut valley lowland break the plateau. Its breadth is from fifteen to twenty miles, and it constitutes so broad and deep a depression that the two parts of the plateau on either side of it deserve

separate geographical names—the eastern and the western plateau. But however much hesitation the observer may, on viewing this broad depression, feel concerning its once having had a surface essentially even with the adjacent uplands, there are three sufficient reasons for holding to the belief in the former continuity of the upland surface.

The first of these reasons is the remarkable continuity of the sky line in the neighborhood of the valleys, a subject already referred to in a general way, but now deserving more particular attention. From any of the hills on which Boston or its suburbs are built, one may look around and see to the north and west a comparatively even sky line, although to the south the line is interrupted by the Blue Hill range. From the hills of Fall River, the view westward across the upper arms of Narragansett Bay discloses a sky line of remarkable uniformity, broken only in a faint way even by "that proud eminence," Mt. Hope. From the margin of either of the uplands that overlook the Connecticut valley lowland, the observer must be as much impressed with the evenness of the sky line beyond as with the vastness of the depression beneath him. It is not only that the upland surface, as represented by the sky line in these several regions, is accordant in each one of them; but that each one is only a part of the single upland, whose various heights fall into close accord when its general increase of altitude to the northwest is perceived. So widespread an accordance of altitude finds no rational explanation except one that develops the present uneven rolling country by the erosion of valleys in a once even upland, and that,

therefore, requires the former filling of all the valleys up to the level of the uplands themselves.

In the second place, all these broader interruptions of the upland by the wider valleys are, as has been intimated, closely associated with the occurrence of belts or areas of softer rocks; while the adjacent areas which still roughly maintain the level of the general upland consist of harder rocks. This is most distinctly seen in the case of the Connecticut valley lowland, which follows the belt of weak red sandstones and shales, famous for the fossil footprints that they preserve, across Massachusetts and Connecticut.

In the third place, our general knowledge of valley growth requires us to suppose that the valleys were once shallower, and their enclosing slopes less widely opened, until at first the valleys must have been faintly perceptible, and the upland almost continuous. Whatever doubt one may at first feel as to the former essential continuity of the upland, I believe this doubt will be entirely dispelled by an excursion over those parts of the region where it is better preserved, and a consideration in the field of the reasons here presented for thinking that the valleys now sunk below the upland have all been etched out from a surface that once extended far and wide close to the upland level. There has been a good advance made in the denudation of the upland mass; it has passed its youth, and entered its adolescence; its maturity and old age are yet to come.

The adolescent valleys of New England may be compared with the valleys of other regions in different stages of development. The narrow trench followed by the Red River of the North in its course along the

middle of the dead-level plains on either side is about as young a valley as we can find; the river has only just begun its work, and in the future the valley must become much deeper and wider. The gorge of the Niagara is an excellent example of an infantile valley; for, however we may marvel at the volume of its excavation, when expressed in such irrelevant human measures as cubic yards, we must admit that the gorge only marks the beginning of the valley whose gradual widening must in time consume the even-topped plateau on either side. The Grand Cañon of the Colorado is, in spite of its immensity, not an old valley, but only a precocious youngster: the great mass of the plateaus on either side is only faintly attacked as yet, and the cañon will not be a mature valley until the plateau is thoroughly dissected by branch cañons, and the cañons widen into valleys. All these valleys are younger than our New England valleys. As to older valleys than ours, I believe there are some among the ancient mountains of New Hampshire, New York, and North Carolina, but their proper consideration cannot be undertaken here.

If the explanation now given for our valleys be adopted, the origin of the upland in which they are cut will require examination; but, before considering this, certain peculiarities of the valleys in their present condition will need attention.

THE BAYS OF THE SHORE LINE.

If we follow down the valleys of eastern Connecticut to the Thames, we find that after its gathering

streams of fresh water have united in a single river, the river loses its normal character and becomes an estuary of the sea below Norwich. The valley slopes, however, continue to enclose the estuary below Norwich in essentially the same manner as they enclosed the river above Norwich. In the same way the valley of the Blackstone leads us down to the arm of Narragansett Bay that heads at Providence; the Taunton river becomes a tidal stream but a few miles below Taunton; it then widens rapidly, and becomes a true estuary before Fall River is reached.

Many other instances of the same kind might be given, all leading to the conclusion that the valleys of our rivers continue seaward below present sea level. Their extension in this form must be inquired into. There are two suggestions that may be made. The first is that the lower portions of the valleys may have been widened and deepened by the tides or by the shore waves; the second is that the lower portions of the valleys now below sea-level were formed by the ordinary process of valley making, when the land stood higher, and that since then they have been flooded by the sea, in consequence of a relative depression of the land. The means of discrimination between these two suggestions are so simple that no one can hesitate to choose in favor of the latter explanation. We have found that our seacoast is now becoming more and more regular, under the action of marine forces. The promontories are being cut back into sea cliffs, and the smaller bays have already been shut up by the growth of sand bars across their mouths. The production of long, branching bays, somewhat like Narragansett,

might be possible in a region where the tides are strong and the rocks are weak, but on our seacoast, and on most seacoasts, such large bays are not of marine origin. The narrow estuary of the Thames above New London is too well enclosed from the active forces of the sea to be ascribed to their action; and this conclusion is perfectly confirmed when we look at the similar but more emphatic cases of the Connecticut, the Housatonic, and the Hudson. The tide is felt in the Connecticut for thirty miles from its mouth; tidal undulations are felt in the Hudson as far as Albany, 150 miles north of New York city. In both cases the upward reach of tidal oscillation marks the distance to which the depression of the land has more or less completely drowned the valley and altered its occupant from a normal river to a long, narrow arm of the sea.[1]

To one who is not accustomed to consider the effects of changes of level on the topography of shore lines, the frequent mention that must now be made of submerged valleys and drowned rivers may seem, at first, to carry the process too far; but observation all around the world only confirms the conclusion here stated for our own region. A slight depression of the coast and a consequent drowning of the lower course of rivers is an extremely common occurrence. We have illustration of it in the gentle depression by which the mouths of the Thames of England, the Seine of France, and the Elbe of Germany have all been converted into estuaries before they reach the sea. We have a much

[1] Two relief maps were employed to exhibit a region dissected by ordinary valleys, and the same region depressed partly below sea level, so as to convert the lower part of its valleys into bays and estuaries.

stronger illustration of the same process in the deeper submergence of the mountainous coasts of Norway and of British Columbia and Alaska, where the valleys have been converted into deep fjords. Most of the harbors of the world depend for their protection from the sea on the drowning of some pre-existent river valley by a slow depression of the land. Rio Janeiro, Brest, Hong Kong, Nagasaki, Sydney, San Francisco, Vancouver, and many other important harbors have thus been produced.

Returning now to the case of Narragansett Bay, a peculiar consequence of the depression of the land and the flooding of the lower part of the valleys may be discerned. A river once drained the lowland of the bay, receiving various side streams in its trunk, and leading them all southward to the shore line of its time. This trunk river has disappeared; only its head branches remain in sight to us, and each of these now constitutes a river by itself.[1] An analogy is often made between a river-system and a tree, each having its trunk and its branches. We may now extend this analogy by noticing that both the tree and the river-system may be trimmed; but in the trimming of the tree, the smaller outermost branches are thrown away, and the trunk and the main branches are preserved; while, when a river-tree is trimmed by drowning, it is the trunk and main branches that disappear, and only the outermost branches survive. An example of this

[1] This change was illustrated in reverse order by changing the blackboard drawing of the state so as to exhibit the sea-bottom as land, and thus to gather all the streams that enter Narragansett Bay into a single trunk river.

may be seen in the case of the Baltic Sea. This depression is an old land valley, along whose axis a large river once flowed out across the platform of the North Sea, then a lowland, to the true basin of the Atlantic Ocean further west. The Baltic River received many branches from Sweden on the west, from Finland and Russia on the east, and from Germany on the south; but the river has now disappeared by drowning, and only its branches still remain to us.

The converse of this illustration applies in regions where the land has been elevated instead of depressed, thereby adding a portion of the sea-bottom to the land area. In such cases, all the rivers are extended mouthward; several previously separate streams may be united and reach the ocean through a single channel. This process has undoubtedly had frequent application in the rivers that flow from the mountains and piedmont zone of the Carolinas, across the former sea-bottom that now constitutes the coastal plain of our southern Atlantic slope; the wide opened valleys of the older upland area lead down to the narrower valleys of younger lowland. New England is, therefore, in this respect, as well as in many others, more like Sweden than like our southern states. The principle of contrast as well as the principle of likeness finds excellent application in this study, and the study of home geography thus leads to a better appreciation of geography abroad.

Mention has been made of the growth of our manufacturing cities at water-powers; the water-powers have been shown to result from a glacial invasion of New England, as significant in our geography as the

Norman invasion of Old England is in British history. Not less important in locating our commercial cities is the shifting of our shore line, and the consequent production of our harbors. Gloucester lies on the shoulders of a half-submerged hill; Salem and Portland possess superb harbors produced by the drowning of rock-bound troughs; Providence and Norwich lie midway on the original courses of their respective rivers, but at the head of the present drowning of their valleys.

In view of these explanations it must be concluded that while our valleys were in process of formation New England stood somewhat higher out of water than it now does. Its area at that time must have been decidedly greater than it now is; how much greater, none can say; but the loss that New England has suffered by the depression of its margin below the sea is surely of much greater value than the increase of area that it has subsequently gained by the deposition of morainic gravel heaps and overwashed sand plains along its borders.

The maritime margin of New England ought therefore to be regarded as a factor that varies under many controls. It has been shifted inland and made very irregular by the moderate depression of an adolescent plateau. The lower courses of the valleys are transformed into bays and estuaries; the interstream highlands stand out as promontories, and occasional isolated hills are cut off as islands. The irregular coast line thus determined has been, in certain regions already mentioned, built seaward by glacial action, an excess of material on the hills of the interior having

been dragged and washed along to fill up the shallow waters close to the shore, very much in the same way that we have on a smaller scale carried the materials of our gravel hills to broaden the Neck and fill in the Back Bay of Boston. Finally, the shore line thus located by inward shifting and outward building has been modified by the action of the waves in the manner described in the beginning of the essay. When thus apprehended, every feature of the coast is seen to have a peculiar history behind it, and every settlement on our coast is dependent in one way or another on the varied processes by which the coast line has been shaped.

THE NEW ENGLAND PLATEAU.

Let us now take up the postponed consideration of the once even upland in which the valleys of New England were etched. Few geographers may care to carry their inquiries so far back into the history of the land as we must now go, but I believe that a sufficient warrant can be found for this long excursion in the better understanding that we shall at the end of it have gained of the relations that exist between our country and other parts of the world.

The New England plateau consists for the greater part of hard, dense, foliated rocks, whose crystalline texture and deformed attitude are greatly different from the fragmental texture and horizontal position of rocks formed on the land or accumulated on the bottom of the sea. All explanations of crystalline texture, such as we are now concerned with, associate it

with slow processes of mineral change deep beneath the earth's surface. The excessively deformed, twisted, gnarled, and wrinkled condition of the foliated rocks also calls for crushing processes characteristic of mountain growth, and carried on under the heavy pressure of overlying rock masses. Both the crystalline texture and the wrinkled structure of the plateau rocks imply a former deep burial, and yet they are both now found at the surface of New England. This can be explained only by supposing that the present surface has been brought down to these once deep structures; that is, whatever unknown amount of overlying rocks once existed here, it has been worn away until the once deep-lying masses are revealed. If we may judge at all of the magnitude of the overlying mass by the scale of rock deformation exhibited in the plateau, we should be fully warranted in supposing that a mountain range, as lofty as the Alps of the present time, once rose above New England. However, there is little gained in attempting to measure in any close way the height to which old New England once raised its mountain heads. It is enough that the heads were once much higher than they are now, and that the plateau in its present denuded state represents the possible future of the Alps when they shall have been laid low, just as the Alps now represent the probable past of New England before it was reduced.

The question may now arise, how could so even a plateau as that which we believe existed before the valleys were eroded in it, have been produced by the denudation of an ancient mountain range? The answer is simple. The even surface of the plateau is the pro-

duct of the (almost) complete wearing away of the old mountain range, until it was reduced to a nearly featureless lowland close to sea-level. It seems at first venturesome to carry our suppositions back to what may appear to be a far-reached conclusion; but the more we examine the surface of the earth, the more fully persuaded are we that the forms of the present are in many cases deeply engraved on the forms of the past; and that many regions where lofty mountains once existed have been all but completely swept away by the slow but unceasing destructive processes of the atmosphere.

It is not necessary here to call in the aid of any other processes, such as the waves of the sea beating on the shore, or the grinding of an ice sheet; for the action of the weather alone would furnish soil to be washed down the slopes and carried away by the streams to the sea, and this accounts for the entire result, provided that time enough is allowed for its operation. We certainly have no reason to object to this proviso. If the reduction of rugged mountains to even lowlands of denudation were a rare process, we might not be required to consider it in school teaching; but even surfaces of this kind are found in many parts of the world. If such lowlands, however common in other parts of the world, were unknown at home, we might not be required to consider them in our study of New England. But when we find that the upland hills, the dominating feature of our New England geography, are but the remnants of precisely such a lowland of denudation, it behooves us to consider it and its origin with much attention.

We would, therefore, ask that an imaginary visit be made again to the hill nearest to our school houses, and that again a view of the enclosing horizon be taken. In spite of the extraordinary disorder of our rocks, we do not see a rugged, mountainous topography with sharp Alpine summits, such as must have characterized the region in the time following the period of deformation. The even sky line of our hills finds no intelligent relation to the structure of the region until it recalls to us a once continuous upland surface, and until that upland surface is recognized as the product of a long-continued cycle of denudation which reduced a young mountain range to an old lowland.

The hearer may properly raise a specific objection to the explanation thus stated. If it is supposed that our plateau surface represents an old lowland of denudation, down to which the weather and the streams wore away the ancient mountains, and below which the streams could not deepen their valleys, how is it that the valleys of to-day are sunk below the upland surface? The answer is, again, a simple one. We must suppose not only that the lowland was produced by denudation, but that, after it was denuded, it was gently inclined to the southeast. A part of its area was thus depressed beneath the sea, forming the submarine platform of the Gulf of Maine, that extends seaward toward the deeper waters of the Atlantic. Conversely, another portion of the lowland was at the same time gently uplifted to form our slanting New England plateau, and it can only be after and on account of this uplift that our present valleys have been made. It is important to recognize that the warrant for supposing

that the old lowland was tilted since it was denuded is found simply in the facts here referred to. They demand reasonable explanation; and no explanation but the one here outlined has been proposed for them. The explanation is simple; indeed, so simple that one who is unused to it may doubt its force; but it holds fast to the facts of observation; it serves admirably, in many other cases than ours, to give rational meaning to the forms of the land. It is truly fortunate for us that the explanation is so simple; for, otherwise, it could not be introduced in our teaching, as it now certainly may be.

When the old lowland still lay near sea-level, the old streams of the long cycle of denudation had done all the work that was then assigned to them; they ran on faint gradients and carried light loads to the sea. Yet the surface of the country at that time must not be considered an absolute level, like the almost geometrical plains of the Red River of the North, between Dakota and Minnesota, where it is said that the curvature of the earth may be detected in the same manner as at sea. The old New England lowland was merely a surface of moderate relief. It must have had gently rolling hills; here and there, eminences of a considerable height may have risen above it. These were relatively small unconsumed remnants of the former much greater mountains; and such remnants we now see in little Mount Hope, whose summit rises gently above the uplands at the head of Narragansett Bay; in the rocky hills of Gloucester, now half drowned on the eastern coast of Massachusetts; in the more commanding summits of the Blue Hill range, south of Boston; and

again, in Wachusett and Monadnock, rising to truly mountainous heights further inland.

But when the old lowland was tilted to the south-east, all the rivers of that part which was raised above sea level were revived from the inactivity of their old age and set to work actively as rejuvenated streams. It is to the activity of the rejuvenated rivers in this second cycle of their life that we owe our present valleys; it is to the slight drowning of the coastal portion of these valleys that we owe our present bays and estuaries; it is to the addition of the morainic gravel-heaps and sand plains in these valleys that we owe the present irregular courses of our streams with their youthful lakes and waterfalls.

The uplifted lowland that constitutes our plateau is not limited to New England; it may be traced across south-eastern New York, where it makes the Highlands that are cut across by the superb gorge of the Hudson, into New Jersey, Pennsylvania, Maryland, and Virginia. It has been recognized among the mountains of North Carolina, although there, as in the White Mountains of New Hampshire, the denudation is by no means so nearly complete as in southern New England. Taken all together, I regard this uplifted and dissected lowland as the most important geographical feature of our Atlantic slope.

Two examples from Europe must suffice for foreign illustration of the dissection of an old lowland of denudation. The Highlands of Scotland possess an accordance of altitude that has led to the belief in their former continuity as a plateau: the plateau is regarded as an uplifted lowland of denudation in

which a great number of valleys have been eroded since the time of uplift. The plateau of the middle Rhine between Bingen and Bonn is, in many parts, especially in the Hunsrück and the Taunus, a well preserved upland, raised from its former position as a lowland of denudation, and now dissected by narrow gorges, of which that of the Rhine is well known.

Our rugged New England landscape therefore offers in its larger features an excellent example of composite topography. Its upland is the remaining portion of an old lowland carved during a former cycle of denudation; its valleys mark the adolescent stage of development reached in a later cycle, the change from the earlier to the later cycle being caused by a general tilting and warping of the region, whereby one part of its surface was uplifted. The drowned valleys along the coast mark an episode of depression late in the elapsed portion of the later cycle. The drift hills and gravel plains are the record of a peculiar accident—a glacial invasion—by which the normal advance of the cycle was for a time interrupted. These are the natural relations of our geographical features, and I believe that our plan of teaching should be closely in accord with them.

I should say perhaps a few words, in closing, as to how far the explanations and illustrations given above may be properly introduced into our schools. I believe, in the first place, that it is the plain duty of every teacher of geography, down even to the primary schools, to strive to attain at least the measure of knowledge of New England that is here sketched out. The teacher may have little occasion to use the knowl-

edge, especially in the lower grades; but the knowledge should be in mind as the essential foundation for the introduction of still simpler facts and relations. I maintain, in the second place, that practically all of the outline here given—and indeed a great deal more also—is within reach of most scholars in our grammar schools. The difficulty that children may encounter in studying physical geography according to this plan does not come from the inherent difficulty of the subject, but from the grave imperfections in our means of presenting it. I would have, if it were only possible, in every school a series of models much more extensive and much better made than the few rough relief maps that I have used here in illustration; and with these and other aids it would certainly be possible gradually to familiarize a class of children with the great variety and the simple relations of geographical forms, in accordance with some such scheme as is here presented. Such teaching might be made almost ideal in its reality and its value; and it is to such an ideal that we must strive.

DISCUSSION.

The discussion of Prof. Davis's paper was opened by Mr. CHARLES F. KING, Master of the Dearborn School, Boston, who said:

The educational world is certainly advancing when it is our privilege to listen to so fully illustrated a lesson in local geography as Professor Davis has given us this morning. Not only has he presented interesting and important facts, but he has presented them in

a manner for imitation by all teachers. Whenever geography is thus taught the pupils love the study. This illustrative method is philosophical, and advocated by all advanced educators—by Commenius two hundred years ago, and by Herbert Spencer more recently, who says that sight is the leading channel of perception.

If it be admitted that illustrations are valuable in conveying correct geographical ideas, in the shortest possible time, to the minds of college students and adults, how much more valuable they must be in teaching the children of the lower grades.

Directors of education are called upon now-a-days to "enrich the programme of the grammar course of study" by introducing new and higher studies. The practical value of such changes is very doubtful; but there can be no question in reference to the value of "enriching the course" by better teaching, by a more general use of illustrations, especially in geography.

The average teacher shows great apathy about using illustrations, which needs to be overcome by the encouragement and help of principals and superintendents. Teachers, principals, and superintendents need to educate the community and the average school committee man in reference to the absolute necessity, for the sake of saving time, if for no other reason, of supplying school-rooms with ample means for geographical illustrations.

III.

ARITHMETIC: WHAT AND HOW.

BY G. I. ALDRICH, SUPERINTENDENT OF SCHOOLS, NEWTON, MASS.

There stands on one of my book-shelves a little volume of forbidding exterior, upon the back of which one may read:

FOWLE'S
TEACHERS'
INSTITUTE.

Should you chance to open the book, your eye would rest on the following title page:

THE TEACHERS' INSTITUTE;

OR

FAMILIAR HINTS TO YOUNG TEACHERS,

BY

WM. B. FOWLE,

For Twenty-one Years a Teacher in Boston; Author of the Common School Speller and Thirty Other School-Books.

And the following sentiment which strikes one pleasantly:

"Not as though I had attained, or were already perfect."

BOSTON, 1847.

While the writer has much else to say which is worthy of attention, I have referred to him for the sake

of the remark with which he opens his chapter on Arithmetic. Let me repeat his language:

"Arithmetic is the all-absorbing study in the public schools of Massachusetts, and probably in those of every other state. As far as my observation goes, it occupies more of the time of our children than all other branches united."

I have no doubt this was substantially true in 1847, and even now it is difficult to find a school in which Arithmetic does not absorb the lion's share of the time and energy of teachers and pupils. Two reasons for this condition suggest themselves. The first relates to the public which supports and patronizes the schools. It is the traditional belief in the supreme importance of this branch of study. The second relates to the instructors who conduct the schools. In general, an untrained teacher knows more of a "method" of teaching Arithmetic, than he knows of "method" as applied to other branches. He is more successful in leading pupils to WORK upon examples and problems than in persuading them to the diligent STUDY of geography, grammar, and history. If these statements are true, let us see what, in the light of them, we are called on to do. Under the rule of democracy, schools will correspond closely to the demands of the people. They will have as good schools as they demand: they will have as poor schools as they will tolerate. Not only are these general statements true, but the schools will put special emphasis on those branches which popular opinion considers of first importance. Now, while public opinion is generally friendly to the schools, its particular form is determined more by prejudice and tradition than by a

really intelligent understanding of what schools should accomplish. I suggest, then, that the fraternity of teachers, instead of being moved hither and thither, somewhat after the manner of puppets, by the unguided demands of public opinion, should be far more influential than they ever have been in molding such opinion. The other reason suggested for the undue prominence of Arithmetic in the schools ought to remind us of a remedy which is more completely in our power. We are called on to secure the same skill in teaching other branches that we may now possess for the teaching of Arithmetic, to the end that our work may become more truly symmetrical. I have thus spent a few moments in urging a reduction in the amount of time devoted to Arithmetic as a corrective to other impressions which may be given by a discussion of the special topic set for this hour. In such discussions I cannot expect to contribute anything which is new. I can only hope to attempt with you a calm survey of the present situation, and so reach some conclusions which, lacking novelty, may yet be of sufficient importance to warrant repetition.

It would seem necessary, at the outset, to precede "What and How," in connection with Arithmetic, with the inquiry, "Why?" If we unfold and expand somewhat the ideas wrapped up in this little monosyllable, "Why," we shall come upon such inquiries as these: What right has Arithmetic to a place in our course of studies for public schools? What ends or results are to be secured as the outcome of its being taught and studied? Now, just as it seemed necessary to precede What and How by Why? so, if we would reach bed-

rock, it seems necessary to go back of the questions just suggested and ask one which is more truly fundamental. For what purpose do the schools exist? Disregarding the domains of moral and physical training; disregarding, while not forgetting, the close connection between the moral and the mental, and having the latter only in mind, we may reply, we maintain public schools to enable each child to make the most of himself, so far as this single agency is capable of producing such result. Without dwelling on this proposition, let us not fail to gather its exact meaning, "to enable EACH CHILD to make the most of HIMSELF." Not to enable any or all teachers to make the most of him; "to enable each child to make the MOST of himself"—not to enable him to become *precisely like* his fellows; "to enable each child to make the most of himself," not to afford you and me opportunities for stuffing him with the various knowledges and informations which we possess in such abundance. Now, a child makes the most of himself, intellectually, by employing, at suitable times and in proper ways, the faculties given him by the Creator. As the outcome of such employment comes the resultant which we name by the somewhat synonymous terms, development, discipline, or culture. As an incident to this employment, since faculty must be employed on, or directed to, some material, there results knowledge. "AS AN INCIDENT," I have said, for we ought to note in passing, what is generally agreed to, that power stands higher than knowledge in the scale of educational values. Omitting, as I must, the steps by which we proceed from these fundamentals to such conclusion, we readily perceive the right

which Arithmetic has to a place in our curriculum. In the early study of numbers and the later study of the science and the art of Arithmetic, we possess an instrumentality which, under wise guidance, is adapted to self-development in the pupil; by the right use of which the pupil's powers of observing, remembering, expressing, imagining, and reasoning may be admirably developed through their own activity. As an incident to this activity, there will come to the pupil certain knowledge which is absolutely essential to him as a member of civilized society. We see, also, the ends or results which are the rightful outcome of the study. These ends are all involved in what I have just said, but we must examine them more carefully. We shall do well to linger here, for the numberless questions which arise as to WHAT shall be taught, and HOW shall it be taught, are quite likely to be wisely answered by those who settle definitely and correctly the ends or results which are the rightful outcome of the study. Before attempting to reply in a general way to the question "What shall be taught?" let me call attention to certain well known facts: I suppose it is true that a conscientious and ambitious teacher of fifty years ago would have affirmed that his pupils had already put upon them all that they could accomplish. Since that time we have either put into the course of studies, or we are urged to put into it, sewing, drawing, music, cooking, temperance physiology, elementary science, sundry forms of manual training—from slojd to bench work—and very likely other branches which I now overlook. We need not here consider the importance of these later arrivals, when compared with Arithmetic.

They have come, and have come to stay. In the management of our courses of study, however, we seem to have forgotten the doctrine of impenetrability—"that property of matter by which it excludes all other matter from the space it occupies"—and have gone on adding one subject after another, to the increasing dismay of teachers faithfully struggling to meet the multiplied obligations heaped upon them. The conclusion to which this line of thought would lead are so obvious that I need not pursue it. We may agree at once that the knowledge of Arithmetic needed by the average man in after life is neither large in amount nor difficult of acquirement. For this reason, as well as to give other subjects of equal or superior importance a chance for existence, we should rejoice at the pruning which the Arithmetic has already received, and be ready to carry the operation still further. I feel no disposition to attempt a precise answer to the query: "What shall be taught in Arithmetic?" Answers to such a question will vary somewhat with the latitude of the speaker. We shall not wander far from right conclusions if we keep in mind, first, the equal or paramount claims of other branches of study; second, the limited knowledge of the subject demanded by the exigencies of after life; and third, that the true importance of Arithmetic is discovered when we consider it as an instrument for mental discipline. And so, we are brought to the second and more important phase of our subject. The WHAT? is of comparatively little consequence: in the How? we face a question of tremendous importance. Perhaps it was Emerson who said to a young person: "I care not WHAT you study, I only desire to

know with whom you study." Here we have emphasized a truth to which more and more general assent is given.

Applying it to the special field of inquiry which now occupies us, we may say,—The character and value of results in any department of study, Arithmetic, for example, will be determined by the personal qualities and professional skill of the teacher. But is this position reconcilable with the views enunciated a few minutes since, to the effect that schools exist to enable each pupil to make the most of himself? One utterance seems to regard the pupil as the principal agent in the production of desired results; the other utterance, seemingly with a total disregard of the pupil, apparently makes the teacher the sole agent in bringing them about. To go into this inquiry would lead us too far afield. As a matter of fact, both statements are true: there is no antagonism between them. If now we ask, "*How* shall Arithmetic be taught?" I answer, having regard to the less important end to be achieved, in such manner as to secure to pupils thorough and enduring knowledge of the essentials of the subject. Employing the briefest form of statement, this will comprise a knowledge of numbers, a knowledge of the expressions for numbers, a knowledge of the operations which we perform with numbers, and a knowledge of the relations which exist between them. Under one of these four a place may be found for each item of arithmetical knowledge. Upon what condition may a pupil secure to and for himself this knowledge? Why not upon the same condition that governs the acquisition of *all* knowledge, viz., indi-

vidual personal experience? If a pupil is to know a number, the expression for a number, an operation or a relation, it must come into his presence—he must come face to face with it, and exercise his powers upon it. There are other ways in which he may learn about, and so know about, any of these; but as I have indicated, and only as I have indicated, can he learn and know the thing itself. The condition of knowledge for the learner determines also the function of the teacher. He can provide the opportunity, the occasion, for the self-activity of the pupil, and he can do no more, save as by his personal influence he stimulates the pupil to make right use of his opportunity. He can neither observe, remember, imagine, nor reason for the pupil. He can provide the occasions for these various forms of activity, and stimulate the pupils to exert them. If we should stop at this point, if we should press no further the inquiry, How shall Arithmetic be taught? our investigation would be sadly incomplete. We have agreed that in the scale of educational results, power, development, discipline—call it what you will—occupies a higher place than knowledge. If this be a general truth, it must not fail us when we seek to apply it to Arithmetic. We need not take time to consider how development is secured to the individual. Having observed in general that training occupies the highest place in the results arrived at by a thoroughly intelligent teacher, we must limit ourselves to an inquiry as to precisely what training is to be secured by pupils as the outcome of their study of Arithmetic. Perhaps we shall be helped to a satisfactory answer to this inquiry

if we observe that it is possible to arrange the subject matter of Arithmetic in two parts. The first part we may characterize by the term "mechanical," and we are at once interested in knowing its distinguishing characteristic, its scope, and the outcome—viewed as training—which the wise teacher expects to secure from it. We notice at once that the pupil is never called on to determine what operation he is to perform. Just as a guide-board may stand at some neighboring cross roads, with the index finger extended, and the words "To Providence," so, in this department of Arithmetic, the direction is invariably given the pupil—now add, now subtract, now multiply, or now divide.

As for the scope of the work we find that it is properly most prominent in the earlier years, and should gradually diminish, coming well nigh to a vanishing point at the end of the grammar course. The outcome of all efforts in this department is, or should be, skill in computation. To designate the result which ought to be forthcoming, we may use the term FACILITY. Here again the daily practice of the teacher—and, consequently, the daily effort of the pupil—is more likely to be right if he first determines accurately the character of the results to be produced. A little reflection shows us that the *facility* of which I speak is distinguished by the highest degree of accuracy,—by such a rate of speed that the pupil is so unconscious of any process that we may fitly describe the action of the mind as automatic, and further distinguished by a steadily increasing independence of symbols. It is important that we should form a just estimate of the value of such facility, neither esteeming it too highly, nor fail-

ing to secure it, because of a lack of appreciation of its importance.

Putting within the smallest compass the conclusions to which a longer examination would lead us, we may observe,—

1. This form of training, which I have named "facility," is no impossible result. The majority of teachers do not secure it, but the success of the minority indicates that all ought to do so.

2. While this facility is worthy such expenditures of time and energy as skilled teachers devote to it, we should realize fully that it does comparatively little, either during the process of acquiring or viewed as a possession, to broaden or enrich pupils who secure it.

Let us turn, then, to the other department of mathematical work, and rapidly scrutinize it, by inquiring as to its characteristics, its scope, and the outcome expected from it. We see at once that the pupil is left to determine for himself what operation he is to perform. There is no longer a sign-board now directing him to add and now to divide. If we inquire in regard to the scope of this work, we find it to be least prominent in the earlier years, and that it properly broadens until in the last years of arithmetical study it should well-nigh monopolize the pupils' attention. To designate the outcome of our efforts in this department of Arithmetic, I think of no single word better for the purpose than the word "power." The materials with which the pupil is employed are quite different from that which occupied him in the mechanical work. There he had examples to be performed: here he has problems to be solved. Now a problem con-

sists of certain statements of fact: mention is made of sundry numbers; the pupil is expected to grasp fully these statements of facts: he must see clearly the relations existing between the various quantities named; from the one or more truths which are given him he must proceed by the exercise of his own faculties to the discovery of new truths. And to the result of these efforts, first put forth by the young pupil in dealing with the simplest problem, and repeated day after day with problems of increasing complexity, I have given the title "power."

How, then, shall Arithmetic be taught? Evidently in such a way as to secure to pupils—not to all in the same degree, but to each up to the limit of his capabilities—these two forms of training, facility and power. It is essential that we have a sound conviction of the relative importance of these two resultants. I have already hinted at what seems to me the truth. As facility is the easier to produce, so it is the less valuable. It is only in that department of Arithmetic where skilled teaching shows itself through the personal power of pupils—through quick insight, logical inference, and sustained attention—that we find a product which is worthy our best efforts. If we scrutinize the actual results in this second department of arithmetical work, we find them generally unsatisfactory, much poorer indeed than are the results upon the mechanical side of the work. If improvement is to be secured in either department it must come through greater skill on the part of the teacher; we can scarcely expect any change in the natural mental endowment of the pupil. It must come from putting more of the

"artist" and less of the "artisan" into our management of the subject. By way of illustration, let us turn once more to that department of the work which I have styled the mechanical and see what should be, at different times, the attitudes of the instructor with reference to his pupils.

First, he is called on to *teach* them. Of course, I do not now use the word *teach* in the ordinary and popular sense, whereby we make it synonymous with the entire administration of a school. I use it now to name the single specific thing which one does when he causes pupils to know, as the result of their own thinking, something which they did not before know. While there is much other important work involved in the management of a school, there is none so important as this. Employing the term in the sense which I have attached to it, we expect to teach during a portion only of the school session. It is certainly desirable, however, that we should know what teaching in this sense really is, and be able to give ourselves due meed of approval if perchance we overtake ourselves in the act. We are called on, then, to teach at proper times the facts of number, to teach processes, to teach definitions, to teach principles. At other times we must become drill masters. The pupils have learned *what* subtraction and division are—they have learned *how* to subtract and divide. But now must come a great amount of practice of the right sort, else the facility of which I have spoken will not be secured. At other times we have occasion to serve as examiners. We need to learn with what success we have taught and drilled. I make no claim that these different forms of

the instructor's activity can or should be entirely separated one from the other; but I am very sure that they should not be jumbled together in the melancholy way in which we so often find them.

It is time now that I guard against a misapprehension which may arise from the use I have made of the term "mechanical." It may be supposed that I expect pupils to execute in a rule-of-thumb manner processes of which they know nothing, processes which are to them wholly arbitrary, as, for instance, the inversion of the divisor where one fraction is divided by another. Nothing is further from my thought. The teaching of which I first spoke involves first, last, and always an appeal to the intelligence of the pupils. The pupils are sent to us that their intelligence may be developed to the highest possible degree; and, as I have tried to show, we allow Arithmetic a place in the schools because under proper management it is a splendid instrument for the development of intelligence. And so I have great sympathy for the children who ask in regard to a given example, "Is this to be an 'in' or a 'by'?" and I have little patience with the individual who gave to his pupils, as a panacea, "The word following 'of' is always the denominator," when they were engaged on such questions as "What part of 5 is 6?" I have referred more than once, I believe, to the well-worn maxim that power is a higher result than knowledge. This is one of the many educational maxims which are on everybody's lips, but which are often little felt in our daily practice. Let us see if we can extract from it something of real use.

If I understand the matter, the maxim teaches us

that the manner or process of acquiring is always of greater concern than the acquisition itself. It says to us that whether we teach Arithmetic or Latin the mental processes which daily occupy our pupils do more vitally concern us than do the increments of knowledge which they secure. And so, if I may present the same thought in a still different way, why should we not regard ourselves primarily as teachers of boys and girls, and not as teachers of arithmetic, grammar, or history? Suppose little John Smith, coming to me next September, takes up the study of Arithmetic, which I know he is to pursue under my guidance for three years. While I have some little regard to the various items which comprise the subject-matter of Arithmetic, why should not my chief attention be fixed on the boy? When he first becomes my pupil I make a study of him—I learn where he is weak, where he is strong, and I say to myself, "If this boy studies Arithmetic with me for the coming three years, their end shall find him a very different John Smith. His powers of attention shall be splendidly developed: he shall become able to express himself exactly, concisely, and forcibly. Not only shall he be accurate and speedy in arithmetical calculation and arithmetical reasoning, but these powers shall be transferred to other lines of thought and action. He shall become persistent and courageous in the face of difficulties. He shall resent proffered assistance so long as there is a chance that unaided he may overcome. It is such considerations as these which seem to me a sufficient reply to the question of "How?" in connection with Arithmetic.

I have said that schools exist in order to enable pupils to make the most of themselves. This has been true for hundreds of years, but the greatest variety of opinion has existed as to the instrumentalities to be employed in the schools for the accomplish ment of the desired end. The Greeks had one opinion, or, even further, Athens held one and Sparta another. The Romans had their opinion, the Chinese theirs, the school men of the middle ages had theirs. New England has had hers, has it now, but it is constantly changing. We ought not to resist this process of change. We cannot if we would. It is reported that Mrs. Partington did not succeed with the Atlantic ocean.

Arithmetic will always hold a place, and that a prominent one, in the work of public schools. It will and ought to be less grasping in the future than in the past. The somewhat fetich-like regard for it which has existed must give way. Pupils who succeed in other directions, but fail somewhat in Arithmetic, must not steadily fail of promotion, and be left stranded like landmarks on the shores of time. Arithmetic is an important subject, but it is not supremely important. Lawrence Oliphant was one of the most brilliant Englishmen of this century, but, when a school-boy, he wrote to his mother, "I am such a horrid sumer it is that keeps me at the foot of my class all the time."

In conclusion, perhaps I should say that in the preparation of this paper I have had in mind the next topic upon the programme of the meeting, "Grammar School Reforms." Since the subject of Arithmetic is quite certain to receive more or less attention from

the speakers upon that subject, I have felt free to touch lightly upon some points and altogether to omit others.

DISCUSSION.

The discussion of Mr. Aldrich's paper was opened by DR. ZALMON RICHARDS, of Washington, D. C. He said:

Everybody who teaches even a common school, and most of those who graduate from it, are supposed to know all about arithmetic; but has anything new or valuable been discovered or invented in connection with the subject during the last fifty years which is of any special value? The science of arithmetic is based upon a very few independent principles. Arithmetic, or the science and art of using numbers, really recognizes only three fundamental principles; the increase and the diminution of numbers, and that all numbers are based upon the unit principle. All numbers consist of one or more units which are used to represent one or more things of different kinds. Common practice requires the use of only four varieties of numbers, the units of integers, the units of common fractions, the units of decimals, and the combination of units of different values of the same kind, commonly called "denominate numbers." The universal laws for the use of these four varieties of numbers are: First, in using numbers we must always consider the name and meaning of the unit used; second, before units of the same kind, but of different names, can be increased, or diminished, or compared, they must be reduced to units of the same name, when they can be compared in the same way as simple whole numbers. The failure to recognize and teach these principles causes an im-

mense waste of time, patience, and of labor, on the part of both pupil and teacher.

When these principles are thoroughly taught and mastered, the pupil is prepared to be taught the only four ways of using numbers: Addition, subtraction, multiplication, and division. The logical part of arithmetic, or the application of these principles to the various demands of life, embraces the whole of arithmetic proper.

The first step in learning how to use numbers, and how to teach numbers, is to master the language of numbers, or, in other words, to learn how to read them. All terms used to represent the different varieties of numbers must be thoroughly mastered. This language embraces the terms used to express the different kinds of units, integers, halves, quarters, thirds, or decimals, and all terms used in the tables of weights and measures, or denominate numbers. It requires a knowledge of the methods of reducing numbers of one name to those of equivalent values in other denominations.

Every child must be taught the true meaning of a unit, and the character which represents a unit, and he must be made to recognize readily any collection of units. To do this nature has given the teacher two hands with ten fingers. When the teacher has exhausted all the uses which can be made with the fingers, there is no better or more simple apparatus which can be used than the old numeral frame. If the reading of numbers themselves is properly taught, the pupils will get a better practical knowledge of the four uses of numbers than they usually do in simply trying to use the numbers themselves.

IV.

NEEDED REFORMS IN GRAMMAR SCHOOLS.

By E. H. Capen, D. D., President of Tufts College.

Doubtless it is expected of me that I shall treat the subject assigned for this hour from the point of view of a college president. The only difference that one in this position can claim is a slight difference in perspective. The colleges, perhaps, have been the first to perceive that, in the Old World sense, we have no such thing as a system of education. With all its advantages, democracy has its limitations. It cannot, for example, put the whole subject of education, from the lowest and most rudimentary forms provided for the youngest children to the most advanced courses of the university and the professional school, into the hands of a public minister for direction and control. Whatever development it attains finds its sanction almost wholly in public opinion. Our instrumentalities of public education have sprung out of certain public necessities that were generally recognized, and, in many instances, persistently urged. If, therefore, there is to be a closer and more effective coördination of the varied instruments of education in our country, it will be because of an intelligent perception of the need of such a coördination, backed by a positive and earnest demand for it on the part of the people. By reason of the distinct break between them and the schools below

them, the colleges have been the first to recognize the lack of harmony in the provision for education. The fact has been impressed by the variety in the content of the preparation received by those who attempt to take up college work; by the inferior quality of the preparation in many of its phases in a multitude of instances; and by the lateness of the arrival of pupils, in some sections of the country even where school appointments are the best. In seeking for the causes of the defects in preliminary training, naturally, the colleges were led, first, to examine the secondary schools. But, while they found in them many matters that needed reform, they were carried in their investigations beyond the secondary schools to the grammar schools. Here they have found many defects calling earnestly for amendment. They believe it is possible for these schools, properly organized and effectively administered, to remove many difficulties under which the colleges labor. In other words, they believe that it is possible for grammar schools to enable the colleges to put the higher education of youth on a broader basis, to impart more unity to it, and, above all, to bring it to a conclusion, so far as their relation to it is concerned, at a more suitable age.

This, however, is not the principal motive by which the colleges are now seeking to bring about important changes in the lower school grades. The colleges, by reason of their independence, for the most part, of popular control, and by reason of their more exalted position, are able to take a broader outlook of the educational field. They recognize, as no other educational agencies can, the responsibilities of education; its rela-

tion not only to citizenship, but to the manifold duties of practical life. They perceive that for vast numbers of those who enter it, the grammar school is the end of formal education. If, therefore, it fails in the results of Milton's "complete and generous" education, its failure is its own impeachment. As they look upon those who are going out into life with only such equipment as the grammar school can give, the colleges are called upon—all who have the welfare of humanity at heart, but especially they to whom the work of education has been committed as a trust, are called upon—to insist that the schools of the people shall be made as efficient as possible, and if they are capable of improvement at any point, to take no rest until the improvement is secured.

My topic implies that reform is needed. It is legitimate to ask, therefore, In what respects?

In the first place, a reform, in my judgment, is imperative in the time spent. I am appalled by the enormous waste of time in the grammar school for the great majority of the pupils. The only word that can describe the pace at which the work goes on is "dawdling." It puzzles me to know what either teachers or pupils can find to busy themselves about for a considerable portion of the time. My own observation has taught me that a pupil of average brightness can go to the grammar school one half the time, say every other day, or one half of every day, and lose nothing that is substantial or fall seriously behind the class. Scarcely a day goes by that, in many schools, hours are not spent in doing nothing to stimulate, or quicken, or give tonic to the mind. Most of the intelligent parents

with whom I have conversed believe that the work, from entrance to the primary grade to the end of the grammar school, can be completely covered in seven years, instead of nine. Many of those engaged in the business of education, who look at the matter disinterestedly, affirm that it can not only be done, but done better and more effectively, in seven, than in nine years, because the very act of moving at a sharper pace gives mental snap and vigor, and ensures that the thing shall be "done when it is done." I am gratified to learn by the discussion of this afternoon that this is now accomplished in some of our better schools.

This is not the same thing as saying that twelve is a better age for entering the high school than fourteen. For myself I believe this to be true. I believe that the whole business of education from the lowest grade to the highest courses of the university would be vastly improved by putting the goal before the youngest pupils and encouraging them to approach it as rapidly as health and thoroughness of work will permit, thus bringing them in contact at a much earlier period with high school subjects, methods, and teachers. This, however, is an open question. There are those, whose opinion is entitled to the highest respect, who think that fourteen is young enough for pupils in general to be introduced to the severer tasks of the high school. Be this as it may, if the present work below the high school can be done in seven years it should be so done, and the two years thus saved could be used, first, for what President Eliot has called the "enrichment of the course" all along the line, and secondly, for the addition of those studies

that will afford broader training and better preparation both for the work of every day life and the prosecution of more advanced study.

This brings me to the next branch of my topic, namely, to the reform that is needed in the subjects pursued. It should be observed in passing that much of the waste of the grammar school period is not only due to listlessness of movement and lack of concentration, but to the substance of education. Pupils are forced to give their attention to matters that are of little or no value to them. In my youth the pupils for several successive terms were put through, besides Colburn's Mental Arithmetic, Greenleaf's Introduction and then Greenleaf's Higher Arithmetic, and the process was kept up until the pupils reached their majority, if they remained in school so long. I knew many a youth who could parse correctly nearly the whole of Milton's Paradise Lost, who violated every principle of English in ordinary speech, and who, to this day, cannot write a grammatical letter. It is not quite so bad as that now. But we keep up not a little of the old folly. Too much time is still given to the elucidation of difficult arithmetical processes and the solution of arithmetical puzzles. Much of the effort that is put upon geography might be expended just as profitably in memorizing the pages of a concordance, while a good deal of the English that is taught is of no avail whatever. It is a good thing for pupils to be taught alertness and accuracy in mental computations, but why consume so large and valuable a portion of a child's life in mere ciphering? Of what conceivable use, to a majority—to ninety-five per cent.—of the

pupils in the grammar schools, are partial payments, progression, permutation, many forms of percentage, and, above all, square and cube root? Certainly those who regard these matters from the higher altitude of advanced education feel that at these points other phases of mathematical instruction may be introduced, that will be equally valuable as training and immensely more practical.

It is hardly possible that between the ages of ten and fourteen a child can master all the intricacies of higher algebra. Nor is this, perhaps, desirable. But by this time many of the fundamental principles of algebra may be acquired, together with a fair amount of skill in the application of them. Such an achievement would be a great gain. It has been demonstrated, moreover, that many phases of geometry can be taught with interest and profit at an age much earlier than ten. To the child's mind it is one of the most interesting departments of mathematical study. After that it is but a single step from the consideration of form and figure to structure and force. In some degree, therefore, physics may properly command the attention of children.

Natural history also prefers its claim for recognition. The Society of American Naturalists is insisting with persistency and vigor that natural history in some form should be a requirement for admission to college. They affirm that nearly every college student has lost the powers requisite to accurate observation of natural objects. Yet every one knows that a child is a naturalist almost from the moment it opens its eyes. My little girl of three years holds up a caterpillar to me

and says, "Is n't he beautiful, papa?" and she proceeds to point out his beauties with an enthusiasm that would put a professor of biology to shame. Yet I suppose, if her training goes on after the ordinary fashion, by the time she is sixteen, a caterpillar will be to her but an ugly worm, the very sight of which will throw her into a kind of hysterical coma. We lose our various powers by disuse. The fishes of the Mammoth Cave "have eyes but they see not." If any one of us were to be shut into a dark room for six months, we might never again see clearly. But do we not deal in the same fashion practically with some of the most important of our children's faculties?

There is no point on which the schools are more severely and deservedly criticised than the teaching of English. The testimony of all whose business requires them to test pupils in that subject is that our teaching of English is ineffective. In other words, the results are meagre considering the expenditure of labor. What is the trouble? Is English a subject of insuperable difficulty? Hardly that. We see children learning it every day with unconscious ease. Those who are reared in refined and cultivated homes speak their mother tongue with fluency and correctness though they may not know a single grammatical rule. There is a multitude of persons in the offices of business and professional men, who not only copy but compose accurately and often with some degree of elegance, yet who have had very little specific training. One is reminded in this connection of Greeley's famous aphorism: "The way to resume is to resume." The way to teach English, or any other language, is by

practice. The anatomy of a tongue, however desirable from many points of view, is without practical utility. So of literature. One may study Shakespeare and Milton, Addison and Johnson, and the other great masters of English until the power of critical interpretation is in some measure attained, and yet not be able to construct one sentence after the Miltonic or Johnsonian model.

But, some one may ask, how about the teaching of a foreign language, ancient or modern, in the grammar school, as the New England colleges in their memorandum have recommended? Though a point of considerable practical difficulty, it is on every account desirable. The experience of the colleges has shown that the study of the ancient classical languages is begun too late for that perfect mastery of which men are capable. The time for the acquisition of language is in early youth when both the faculties and organs of speech are in a plastic and pliable condition. The fact that our American scholars in general are inferior in their classical attainments to the majority of educated foreigners is due not to the inferiority of their instruction or mental equipment, but to the delay in beginning the study of Latin and Greek. Unquestionably, therefore, classical learning in this country would receive a great impulse, if the study of Latin, at least, could be begun by all those who are looking forward to the more extended courses of the college by the age of eight or nine. But this is not the only reason for making early provision for the study of a foreign tongue. The knowledge of either French or German is coming to be more and more a thing of necessity in

education. Now, since for so many, formal education ends with the grammar school, it has not discharged its function unless it has made the beginning required for the mastery of some language other than English. Such a provision will involve undoubtedly an increase of expenditure, and it may be practicable only at present in grammar schools of the better sort. But it is for so many reasons desirable that the beginning should be made, whatever the expenditure.

There are still other subjects that belong to the grammar school curriculum and that must very soon take their place therein. The success that manual training has achieved already shows that it ought to be a substantial part of education, and in order that no portion of the people may fail to reap its benefits, it must be in the grammar school. Moreover, the sound body is of equal importance with the sound mind. It is a sin not to have physical training at every point in the entire process of development. A few days ago I attended the graduation exercises of a girls' grammar school in Boston. Of the sixty graduates, every countenance was ruddy with health. All the movements of the pupils were graceful and easy, and there was none of the self-consciousness that so often characterizes, to their disadvantage, girls in that stage of their development. The most distinguished woman in America sat by my side. Her amazement was equal to mine. We commented together upon what we saw, and wondered what was the secret of it. At a certain point, however, in the programme we were favored with a series of exercises in gymnastics. The mystery was solved. The result certainly was suffi-

cient to convince the most skeptical of the value, nay, the necessity, of physical culture.

But I pass from the consideration of the need of reform as to subjects pursued, to consider briefly the reform that is needed in methods.

Already the conviction has been reached that the best teaching will not hereafter place its dependence upon text-books. Pupils from the very outset must be led to observe and investigate. The knowledge they acquire in this way will be original with themselves, and be their own proper possession, remaining with them forever. More than that, the feeling is growing that the supreme result of education is the power to observe facts with accuracy, to discriminate them, classify them, coördinate them, draw inferences from them, and above all the power to describe clearly and precisely not only the facts themselves and the conclusions reached, but all the processes experienced by the mind in dealing with them. Accordingly we shall expect the school-house of the future to be constructed not so much with reference to the reading of texts, as to the consultation of library books, for the proper display of maps and diagrams, and for the use of test-tubes and scales and measuring rods. Objective study must be carried forward much farther than it has yet reached. It must pass beyond the stage of mere diversion, in which play seems to be substituted for work, until it becomes itself the process. The pupils must come to understand that the way of knowledge is a way which they are to adventure and find out for themselves, and that the function of the teacher is simply to inspire and guide. In other words, the

laboratory method, the method of experiment and observation, will invade all departments of study and occupy pretty much the whole field. The movement, however, in this direction has only just begun. It is pretty well entrenched, perhaps, in the better schools of certain sections of the country. But it has still to go forward and take possession of great districts that lie beyond, in which the greater portion of the children of the land are receiving their instruction.

But there is one reform of method which, more loudly than any other, calls for adoption. Indeed it is not so much reform that is demanded here, as revolution. I refer to the graded system. Why should a pupil's advancement be gauged by years? Why should my boy at nine be put beside your girl at nine? Why should he modulate his steps to hers, or why should she adjust her pace to his? Why should either be forced to pause from January to June for a desired promotion? Why should a pupil's attainments be judged by the number of years he has lived, rather than by work accomplished? Why should time actually spent in the schools take the place of capacity? Or, to put the interrogatory in a different way, if a boy can climb the ladder of knowledge two rounds at a time, why should he be compelled to place his foot on every one? If a girl can rise into the upper realms of truth with the swift, sure flight of an eagle, why should she not make her flight in that way, even though her companions mount upward by slower and more painful efforts. This is the method of the graded system, and in the hands of stupidity and indolence—where, alas! it too often is—it is as inelastic and irksome as an

iron band. The graded system, I suspect, would have been called by the older theologians a device of the devil for the purpose of keeping all the brighter and more aspiring children down on the dead level of mediocrity. An Hibernian might define it as a system in which the rear rank heads the column. Certain it is, that under this system, rigidly applied, the pace of the entire school is fixed by the rate of movement of the foolish and lazy.

Even the ungraded school of my boyhood, in which one teacher had fifty pupils in every subject from A B Cs to trigonometry, was infinitely preferable to that. Then, if the teacher was ambitious and competent, there was some chance for the restless and expanding mind of the scholar. Indeed it is this, no doubt, that has made the "old red school-house" of New England the power it has been and is to-day in our American civilization. "All men are created equal." But that does not assert or imply that all are equal in capacity or achievement. However pressed, the great generalization on which we build our institutions of civil and social life is only the assertion of the privilege of every American child to go forward as fast and as far as his legs can safely carry him. All the avenues of culture are free highways, and neither robber nor toll-monger may obstruct the passage. All doors of inquiry and investigation are open, and any one whose adventurous steps have led him up the stairs to the portal's front may enter in without fee or reward. To adopt a different plan is to reverse the policy according to which the whole order of our social life has been developed.

Finally, I am compelled to say there is need of reform in the quality of grammar school teaching. A wise friend of mine, who has many children in the public schools, says, and I think he is right, the grammar school teachers do not know enough. Their equipment, in other words, is inadequate and poor. I would not make too sweeping an assertion. I would not needlessly wound any class, and especially a class for whom I entertain such respect as I do for the teachers of our country of every grade. Moreover, I have nothing but admiration for the instrumentalities that have been appointed for the better preparation of teachers. The normal schools are doing a great and noble work. But one who is brought into intimate relations with them as I am, cannot but feel that the foundation of general culture on which professional training is based is narrow and insecure. Too many of those by whom our normal schools are thronged have had only the ineffectual and poor preparation of very ordinary common schools. To imagine that two years in the normal school may make of such persons accomplished teachers, is to conceive a greater miracle than this very skeptical age will believe. Then, too, many of our cities have training-schools of their own in which they take pupils, sometimes at the completion of their second year in the high school, and proceed by one or two years of specific training to prepare them to take up the work of teaching in the very schools in which they have been educated themselves. Such a system of inbreeding can have but one result. The old Peruvian incas sought to preserve the purity of the royal blood by very close intermarriages.

The practice, while it kept the high-born lineage free from every low-born taint, was fatal to the health and vitality of the royal family. The truth is, that vices are quite as likely to be hereditary as virtues. Shakespeare felt this when he said: "The evil that men do lives after them; the good is oft interred with their bones." The stream cannot rise higher than the fountain. If we attempt to fill our reservoirs of culture from the quiet little streams away down in the low valleys, how can we expect that head and flow of knowledge that will sweep away all the obstructions of ignorance? We must go up into the mountain heights of purest intellectual achievement for these streams which evermore refresh and invigorate.

Again, we want more enthusiasm. Some one has said that the good teacher, like the poet, is born, not made. Undoubtedly natural qualities, here as everywhere, count for much. But it is also true that the teacher, if not predestined by original endowment for the work, must be prepared for it by a new birth. Yet how many there are who have never experienced either birth. They have taken up teaching, not from any inherent love of it, but as a means of livelihood, and because no other resource was open to them. Some are using it merely as a temporary make-shift, while they are on the way to other, and to them, more important relations. It is not to be wondered at that they are wanting in either the enthusiasm of humanity or the enthusiasm of learning. They are without that overwhelming love of men that leads them by an irresistible impulse to do everything in their power to lift up, transform, exalt, and glorify their fellow creatures.

Their souls have not been set on fire by that holy and consuming flame which true learning always enkindles. Their work, therefore, is without inspiration, dreary, dull, monotonous, and perfunctory.

Let no one say that I am unmindful of the wearisomeness of teaching. I know full well the exacting and exhausting nature of the work. I also know its compensations and ameliorations. Let it be done, not alone from a sense of duty, but in the spirit of a noble consecration let the teacher feel that he is the servant of humanity, divinely chosen, perhaps, for the dispersion of ignorance, for the diffusion of light and truth, for the uplifting and recreation of humanity; let him be convinced that he is one of the instruments in the hands of the Almighty for the advancement of civilization, for the sure establishment of the principles of progress, and for him weariness will be forgotten, pain annihilated, toil transfigured, what was once an almost insuperable burden will become a delightful occupation, and the responsibility that oppressed with its weight, will be a sacred trust, whose proper discharge is henceforth a source of joy unspeakable.

I am neither an iconoclast nor a pessimist. I do not indulge in criticism for its own sake. Neither do I take a doleful view of the future of education. On the contrary, if the occasion permitted I could find more words of commendation than of fault-finding, and I do believe that the most glorious day for popular education is dawning that the world has yet seen. More lenses are now turned to this great subject than were ever before concentrated upon any single matter in the history of humanity. The most enlightened patriots

and the wisest statesmen have come to feel that there is no other interest before this. The loftiest attainments are cheerfully consecrated to its service. The conviction is deepening that the broadest learning and the profoundest culture are neither too broad nor too deep for the humblest parts of teaching. The thirst for knowledge is increasing on the part of those to whom education is mainly entrusted. The women of the land are now possessed with the full power of the renaissance. They are pressing forward, regardless of every barrier, through the doors of colleges and universities, and demanding for themselves the prerogatives of highest culture. As Mrs. Palmer has wisely said, before the first quarter of the twentieth century is over there will be more women than men in America that have received college and university training. Then we may expect to see our grammar schools in the hands, not of those whose education in the common schools has been supplemented by a brief course in the normal school, but of those who have received the most thorough and liberal instruction that the best institutions can give. Then a college diploma, as the warrant for the teacher's art, will be as imperative here as in the old world; and then will begin the millennium of education.

V.

GRAMMAR SCHOOL REFORMS.

By James A. Page, Master of Dwight School, Boston.

This paper should be called the perspective element in, or the relative importance of, educational problems. Abraham Lincoln understood the relative value of problems. "One war at a time" and "Do not cross a bridge till you come to it" were his working rules.

The pressing educational problems of the grammar school appear to me to be those of manual training, the kindergarten, the economy of time, physical exercise, and supervision; while such questions as the addition of foreign languages, stenography, the elements of political economy, and so forth, may well be left to a future solution. The questions of manual training and of the kindergarten are two whose educational importance no thoughtful teacher doubts, but their relation to the existing conditions in the grammar school is still to be adjusted. This adjustment, together with that of the economy of time, are of the first importance, and the educational situation should not be complicated, at this time, by the introduction of another problem of so great importance as the addition of two or more foreign languages. Let the ground be cleared first.

A thousand thinkers are at work, a thousand pedagogic microscopes are examining the whole question,

but what we want and must have is *time*. The present work of the kindergarten and of the manual training school must be allowed to go on, until these thinkers and workers have gained enough experience to enable them to thoroughly adjust the relation of the kindergarten and the manual training to the grammar school. Such experience has *not* yet been gained. Although we have learned much from our experiments, there is too much left to be learned to admit of an entire solution of the problem at present. It can be seen readily, then, that the element of time is of the greatest importance. The grammar school must not "bite off more than it can chew." We already know the value of these two rising interests; we believe they are to enrich our whole scheme of education: let the grammar school, then, assimilate what these have to give to it before taking other food, however nutritive it may be.

The grammar school has had in my time to meet various questions. First the grammar schools were called "dormitories," and Horace Mann was summoned to awaken them. Soon they were named "slaughter houses," and were charged with "murdering the innocents" through overwork. When I was a boy I was taught sewing in a school in Boston; then for fifty years sewing in the schools was suspended. Now, in 1892, every boy in a certain class has made an apron for his mother; and 102 boys in another district have learned to sew. If it was a good thing in my boyhood, why was it ever excluded, and for so long a time? In 1854, algebra was taught in the Dwight Grammar School, as far as quadratic equations. It

was then thrown out of the curriculum, and now, after nearly forty years, it is proposed to introduce it again. Why was this?

Again: Through the influence of Huxley and Darwin, came the question as to the relative value of the language studies and of the elementary science studies. A place was made for the elementary science studies, and the pendulum swung that way. But the question is by no means settled. Cardinal Newman says on this point: "The simple question to be considered is, how best to strengthen, refine, and enrich the intellectual powers; the perusal of the poets, historians, and philosophers of Greece and Rome will accomplish this purpose, as long experience has shown; but that the study of experimental science will do the like has been proved by no experience whatever." On the other hand, Spencer insists that for direct self-preservation, or the maintenance of life and health, the all-important knowledge is science. For that indirect self-preservation which we call gaining a livelihood the knowledge is science. For the due discharge of parental function, the proper guidance is to be found in science. For that interpretation of national life, past and present, without which the citizen cannot rightly regulate his conduct, the indispensable key is science. Alike for the most perfect production and highest enjoyment of art in all its forms, the needful preparation is still science.

Gen. Francis A. Walker agrees with Spencer, but goes farther. He asserts that "Science forms the best training for the mind." As Newman says, this has not been proved yet, if for no other reason, because

the system is new. Darwin, however, is a contradiction to some of the claims of science as an educator, for the imagination and love of music seem to have been destroyed in time by his close observation of nature. He complains that he had become a mere machine for grinding (out of many facts) a general law; and he declares, were he to live his life over again, he would read poetry and hear music every day; in his last years he could find no pleasure even in Shakespeare.

From these considerations we see that the schools need to be protected from these oscillations of the pendulum; from these diametrically opposite opinions. The next great educator is to tell us how this is to be done.

The grammar school is not the place where experiments so expensive should be tried. The experimental changes should be made, as is done with manual training, on a small scale, until we have availed ourselves of enough experience to formulate the general rule.

I see no protection from this waste and expense, except in far-seeing, wide-spread, and intelligent *supervision.* "What we need is," in the words of a late writer, "the breadth of mind which brings all the conditions before it; the clearness of sight which discriminates, weighs, and measures; and this, with the always present thought of the end to be attained or to be approached; and last, but not least, the cool self-control which poises untroubled, with balanced wing, over all the conditions, suspending action till a rational decision has been reached." It is seen, therefore, that

an advance in the right kind of supervision is an advance in settling and securing from sudden change the program of the grammar school.

Another change which would contribute to the settling of the program question is conditioned upon a change in the habits and feeling of the people. "What we want," as one of our newspapers says, "is to bring our youth at an earlier age within the limits of strong work. The Germans and French put their boys into the schools and compel them to work, utterly regardless of their social education and without playing fast and loose with athletics and military functions and other outside attractions. Education with them is the stepping stone to success in life, and it is the one thing that they are urged and compelled to accomplish. We proceed upon a different principle. We load our school children with the engagements of our social life, and cry out that the dear creatures are being injured if they take their studies as if everything depended on it. Here is the weak point in our system. It is with the parents of the children who constantly plead that they shall be spared too severe exertion, and shall divide their strength between their studies and their social training. This is one thing to be mended.

I have a case in mind: A German boy in my own class of this year, who came into the school twenty months ago without a knowledge of the language, and who graduated at or near the head of the school. This boy says, and I give you his own words: "The German children are treated more severely than those in America. German boys *must* get up early in the

morning, and must go to school at seven o'clock in summer and eight in winter. German boys have home lessons already when they are so high. I think that is of great value to them. By it they become used to *work*; they are held to something, and are responsible for something. Here, when school is out, the children have nothing to do until the next morning; they have more to do with play than with school. This is not right; they should spend more of their time for school than for anything else, which they do in my country."

Whatever change may be made finally in the program of the studies of the grammar school it is important that the *length* of the course be not increased, but rather diminished. This question has been discussed by Dr. Emerson E. White of Cincinnati, and the experiment of shortening the six years course for the brightest pupils, is being tried in the schools of Cambridge.

It would seem that something like the following plan will be found necessary:

First, establish definite standards for every grade.

Second, allow pupils to take the standard grade examinations in single studies whenever demanded by parents or the conditions; and when the grade standard is shown to be accomplished, pass the pupil to the next grade in that study only.

Third, arrange the daily program so that recitations on the same subject occur at the same hour in all the rooms.

Fourth, allow pupils who have passed any grade examinations to go to higher rooms for recitation in the subject in which they have advanced.

Fifth, when a pupil has completed a study, allow

him to pass to a special class for instruction in advanced subjects under a special and able teacher.

This would result in

1. A discriminating enrichment of the grammar school course, and the school would require no reorganization.

2. The expense would be small.

3. It would enlist the interest of parents and children.

4. It would leave no gaps, as double promotions do; and it affords a chance for unequal advancement in different studies, which is best suited to individual development and the necessities of the case.

5. It makes a proper use of written examinations, making them a help to promotions and to graduation.

This plan is suggested by Mr. Ripley. Let me say, then, that in my opinion the perspective of the situation requires that the problems on hand, and still unsettled, are altogether of the first importance. Let us cross the Rubicon with them. Until the questions of manual training, of the kindergarten, and of the economy of time are settled, the question of the introduction of foreign languages may well wait.

I give a few of the considerations which have influenced me in my conclusions. In regard to the length of the course:

1. Mr. Philbrick said, long before he died, "The brightest pupils in the schools are simply 'marking time.'"

2. Mr. Seaver says, "The devil of uniformity has got into the schools."

3. I found a boy in one of the lower classes who,

under the stimulus of the promise that when he reached the head of his room he should be promoted, went up five rooms successively in one year.

4. A gentleman now quite in middle life, connected with one of our large banking houses, said to me lately, "A half dozen of us bank men, graduates of your school, at a chance meeting the other day, all agreed that with a good teacher we could have done all the work in your school in three years."

5. In Henry Cabot Lodge's *Life of Alexander Hamilton*, the author states that Hamilton's first thought was for Princeton, but as he characteristically proposed to go through the course as rapidly as he could without regard to classes, the rules of the college would not permit his admittance, and he entered King's college in New York, where he prosecuted his studies as fast as he wished.

No method, however good, should stand in the way. No method should be a fetich. The teacher is himself the method. Dr. Mark Hopkins at one end of the log and the student at the other is a good definition of a method. Who that heard John Boyle O'Reilly before the Schoolmasters' club can forget his glowing tribute to the old teacher in a remote state and a remote county of that state who put fire into the blood of his pupils? Mr. O'Reilly stated that five of these pupils had lately met in New York city, when it appeared that four of them were editors of leading newspapers, and all of them agreed that they owed all they were to that one old teacher remote from supervision and unacquainted with modern methods.

A primary school teacher in one part of the district,

a graduate of a normal school, met with most excellent results, but never could explain why she did as she did. She builded better than she knew. Another older teacher, in another part of the district, wholly unacquainted with normal school methods, and teaching her little ones after the old alphabetic manner, produced such good results and sent her pupils up for promotion so well prepared, that she was allowed to go on in her old way through many years of good service to the end. The supreme test of any method is its product. And yet there is a store of principles, methods, and devices, that the teacher cannot afford to ignore. We have much yet to do in carrying these methods to the lowest levels of our public teaching before broadening the program with additional studies.

A rude, unkempt boy of the hoodlum order entered my school a few years ago, and I had some difficulty in placing him. After a pretty thorough examination, I put him into the hands of a teacher whose powers I had already tested, and awaited the result. It was not long before the miracle began. I first noticed that his shoes were blacked, and though brutal companions often stepped on them purposely, he persevered. Then the improvement extended to his hair, and finally to his hands, nails, and even his teeth, until at last the very lines in his hard face began to soften and disappear. A teacher who could work a change like this could use any program and elevate it. She read into it what founders of our schools and good men all along the line have meant should be there, what Matthew Arnold meant by "humanizing the pupil." She

extended and enlarged the *in loco parentis* idea. Her contribution was against the survival of the unfit.

The question that confronts us all is, "What will you do with your program?"

Will you lengthen it? Yes, by getting every child of proper age into the kindergarten.

Will you deepen it? Yes, by any method that *humanizes*.

Will you elevate it? Yes, by all that you know, and especially by all that you feel.

Will you broaden it by the addition of foreign languages? Yes, but NOT YET.

VI.

ENGLISH IN ELEMENTARY SCHOOLS.

By Ellen Hyde, Principal of the State Normal School, Framingham, Mass.

I have been asked to speak for half an hour on "English in the Common Schools," and, though I cannot hope to have anything strikingly new to say to this audience, I am very glad to furnish a starting-point for discussion and to turn it to some subjects which I think need attention.

By the "common schools" I mean, as I suppose we all do, all the grades below the high; the schools in which the great mass of American children are trained, and beyond which very few of them ever go.

We are accused by foreigners of producing our boasted equality by levelling down; if we are to level up, it is in the common schools that the work must be done. For this reason it would seem that these should be our best schools, have the most money expended on them, be sure of the wisest supervision and the best teaching. It is good that so many people are to-day interested in "enriching" them; but among the conflicting claims of algebra, Latin, and modern languages, is there not danger of neglecting the mother-

tongue? I wish to put in a plea for the enriching of our common schools through the English language.

I have been asked to consider particularly the "What?" and the "How?" of this subject, so I will assume that there is no question about the "Why?" and that you all agree with me in my profound belief that there is no other subject to be compared with this in importance; that for the uses of daily life, for intellectual culture, for moral upbuilding, and as a safeguard to the state, no other branch of study can compete with the English language. Assuming this, we may at once proceed to discuss the "What?" and the "How?"

Leaving out of the question the reading and writing required for citizenship, which always must and will be taught, and which appear to be taught fairly well in our elementary schools, what are the departments of English which are of most practical utility? By which I mean, which will most conduce to the success and happiness of the individual and the value of the citizen? For we teachers must not allow ourselves to accept the commercial standards of the practical and the valuable. We must recognize the fact that those studies are the most truly practical which most surely and completely develop human intellect and character; which, while correcting faults and repressing vicious tendencies, build up individual power, and train the child in such a way, that when a man he will be most completely himself, most truly what his Maker intended him to be. Judged by this standard of utility, it seems to me that the vocabulary, composition, and literature are the branches of English most deserving of emphasis in our common schools, and most in need of it at

the present time; and I would like to start the discussion with a few words about the "What?" and the "How?" in regard to each of them.

I. Let the children be taught an English vocabulary, wide in range and elevated in character. Language is a natural expression of human thought and feeling. A new-born child is a little speechless creature chiefly because he has nothing to say. His first words mark the period of his first clear ideas; through life the extent of his vocabulary exactly defines his range of thought; the tone of his vocabulary indicates the nature of his thought, and the precision with which he uses it measures the clearness and distinctness of his thought; from the cradle to the grave "his speech bewrayeth him." The English language is a rich and noble composite of over one hundred thousand words. The man who should know every one of these would have one hundred thousand distinct subjects of thought. The person who knows only a few hundred of them has his thought correspondingly restricted. The man of a rich vocabulary is a man of many resources, of wide and varied interests, and (given the right moral conditions) the happy man: a meagre vocabulary, being interpreted, means a narrow range of thought, few interests in life, at best, restricted happiness, at worst, vulnerability to vice; for "Satan finds some mischief still" not alone for "idle hands," but also and chiefly, for vacant minds. Let the children of America have a full vocabulary! Again, this noble mother-tongue, the legacy of many generations and many races, so rich for the expression of the profoundest thought, the loftiest aspiration, the deepest

emotion, and the most delicate fancy, lends itself with equal readiness to the most trivial and the most sordid of human interests. Will it make no difference to a young mind whether its vocabulary is adapted to express its highest aspirations or its lowest instincts? Or whether, missing both extremes, it serves only for the supply of his daily needs? Expression reacts on power, and our words not only reveal our present states in thought and emotion, but in a measure, decide what our future shall be. I believe that many a poor child has the stirrings of his better nature repressed and stifled by the lack of fitting terms in which to express it.

But what, specifically, out of this great treasure of English words, shall the child be taught? First, necessarily, the humdrum drudges of daily life—the names of food and clothing, of household and social relations, of the common employments and recreations of life. These will need comparatively little attention at school. They will from the first, signify pretty clear ideas: to make those ideas increasingly distinct will be the teacher's task. Next we may name the common relation words, the prepositions, pronouns, conjunctions, and adverbs which so make or mar the propriety of our daily speech. (N. B. The teacher who will train fifty children to use "like", "as", "so", and "nicely" with precision will be a benefactor to his kind!) Add names of the natural phenomena of the world about him, as many abstract and general terms as he can grasp, and words expressive of fine qualities and emotions. These are specimen classes of the words that might and should be taught. The impor-

tant thing is that the acquisition of a vocabulary, copious and elevated, should be a distinct aim in the school work, and that learning the meaning and appropriate use of words should have a recognized and honorable place in our programmes.

In regard to the "How?" which introduces the subject of methods, I would like to say right here, that I think methods can be taught to only a very slight extent. They must be original. The best that one mind can do for another for assistance in teaching, is to point out the aim of the work, to indicate the lines along which it should run, to establish the principles which should govern it, and to arouse a genuine enthusiasm for doing it. But the detail of method must depend on conditions which are never exactly alike in any two cases, and for one mind to try to make an exact copy of another's way of doing things, is like David trying to fight in Saul's armor, or worse still, like a burly Saul trying to squeeze himself into the armor of little David. Method, to be good, must be the outgrowth of the interaction of mind between each individual teacher and his class. This is especially true in so vital a subject as language. I deprecate attempts to teach the detail of method; I deprecate the great number of books which tell teachers just how to teach this, and how to teach that, and what to say on this point, and what on the other. I believe that they tend to lifeless mechanical work that is harmful alike to teachers and pupils. The great aims of teaching, and the principles which should govern it are universal and eternal, and can be taught; methods to be the best, must be original.

It is a psychological and logical necessity that a child's first essay in language should be the learning of names of objects; it is equally matter of daily observation. The little lispers in every family are engaged in fitting names to things, or in acquiring a vocabulary. The fond mother teaches her darling to say "papa," possibly she takes the trouble to teach him a dozen other words; seldom, if ever, more, for Mother Nature takes him on her knee, and he learns from her much faster than his other instructors can follow. Every day sees some addition to his store, but made so naturally and easily that the progress soon ceases to be observed, and we only say "the child has learned to talk." But how small a part of the hundred thousand words of his inheritance has he yet taken possession of! When he enters school he has, perhaps, one or two hundred; many of them, most, indeed, are signs of very indistinct ideas, and many which he understands he cannot use,—the word when spoken by others suggesting the right idea, but the idea in his own mind not being invariably associated with the word. The teacher's first task is to continue and broaden this natural process of acquisition. The nature study, fortunately becoming general, may be made a most potent factor in it, but should not be the whole. The works of man with their parts, properties, and relations must also be examined and their names learned. This work, including learning the visible signs for things, or learning to read, together with singing, drawing, modelling, and various manual operations for giving dexterity are enough for the child's first year. His number lessons may well give place to

it with no detriment to his future progress in arithmetic and much gain to everything else.

A vocabulary book is an essential adjunct to this work—a book in which the teacher shall record all new words taught, which will show her at a glance whether the learner is getting a wise variety, and from which she may give reviews by requiring the words to be used in new and original combinations, both oral and written. The danger in these first word lessons is of failure to make the words really signs of ideas to the child. In these lessons the little learner has unwittingly begun the progress of a lifetime, for to the end, as we make acquaintance with new things we add new words to our vocabulary, and familiar ones constantly acquire new significance as we gain deeper insight into life and its meaning.

A new phase of language teaching begins when the child has learned to use books with facility. If we renew our own linguistic experience we shall find that a large part of our vocabulary has been gained from reading. This is one of the minor reasons for a careful selection of books for children. There is both good and bad society amongst words. The vocabulary of most modern stories for children is a common, vulgar herd, slangy, weak, unsuggestive, while in the works of our best authors, the diction is worthy of the thought and has a distinct educational value. From such books as the "Pilgrim's Progress" and the "Wonder Book" the child will gain, not only a large number of words, but fine and elevating ones.

The essentials for this part of our work are a wide acquaintance with good books for children, wisdom in

selection, and adroitness in insinuating them into the children's favor.

Another answer to the "How?" for this department of teaching is by the direct study of words. The pupils of the older classes should learn the most common prefixes and suffixes and have practice in using them in connection with some fruitful roots, and should study synonyms sufficiently to discover that there are none in the English language, in this way adding to their knowledge of words, discrimination and exactness in their use.

II. The second part of our subject is composition—the "what" and the "how." The word is too often one of terror to both teacher and pupils. To the teacher with some reason, as to teach it well requires more time than is often available. But, since expression is as natural as breathing, there is no reason why children should not enjoy speaking and writing their mother-tongue. By composition I mean original verbal expression, either oral or written. The one universal form of written composition is the letter. May not, can not, shall not our children be taught appropriate and courteous forms of address and subscription for all kinds of letters? And may they not be taught, also, to write a business letter at once logical, concise, and courteous; and friendly letters which shall narrate their experiences, of whatever kind, agreeably, and express their kind feelings kindly? May they not be taught, whether with tongue or pen, to describe accurately, completely, and with due regard to proportion and to narrate truthfully and picturesquely? These are some of the things which I

believe ought to be, and can be, taught in our common schools.

"How?" First, by giving time enough to it. One fourth of the whole school time seems to me not too much to devote to the mother-tongue in all its branches. Second, by having no "language lessons." This may seem paradoxical, but a stated language lesson is not only often the excuse for the omission of all other language teaching, but it implies that language can be treated like geography or arithmetic, and that when we begin some other subject, we are, for the time being, done with language. Whereas, the children should in every way be taught that language is the dress of all thought, and that they must both learn and practice correct use of it in all their lessons. Even the arithmetic, apparently the most unpromising of all fields for language teaching, furnishes its set of terms to be learned—each contributing its idea to the mental store—and its essential qualities of exactness and conciseness to be incorporated into style. The writing out in full of an arithmetic lesson is a most useful composition exercise.

III. Third, in selecting topics for composition we must be careful to follow the natural growth of the mind. The too common thoughtless and haphazard way of assigning composition subjects seems to me more than anything else to blame for the almost universal distaste for writing. We are too apt to forget the very limited range of a child's thought, or to be in too much haste to broaden it. A child of five or six is making acquaintance with the world, and states his observations in simple sentences. To put together two

thoughts in a complex or compound proposition is quite impossible to him. Our business is, not to hurry him into complex statements—nature will attend to that in due season—but to teach him to make his simple sentences correctly. As he cannot write, his first lessons will be telling his observations of things, in his own simple way, and so the first primary grade compositions will be oral description of common things which are immediately present to the senses. Observation lessons of all kinds furnish the best possible opportunity for it, and the teacher's vocabulary-book will give it unity and point. The learner should not be allowed to restrict his descriptions to perceptions of sight. Great word artists make inimitable use of the products of the other senses, textures, sounds, perfumes; wise teaching would produce such artists.

About the tenth year of life, when the child has learned to read and write, the perception processes yield precedence to the representative, and composition subjects may appeal to the memory. Then all the lessons may be used for language purposes in the way already alluded to for arithmetic: the sciences giving the natural field for description, either from perception or memory,—the history and reading introducing narration. Hosts of appropriate subjects now present themselves; such as reproductions of what has been read, paraphrase description of familiar persons and places, the story of any interesting experience, as a visit or a journey, and many others. Imaginative composition may follow. It might go hand in hand with the last, except that it is well for the child to learn to tell the simple truth before giving wing to his

fancy. Such subjects as the following suggest the simplicity of this work: "The Life of a Doll," "The Story of a Jack-knife," "The Adventures of a Butterfly," "Conversations between Flowers or Birds," "A Visit to the Man in the Moon." To sum it all up in a word, composition subjects should follow the child's mental development, not anticipate it; his problem should be how to arrange his material correctly and agreeably, not how to create it out of nothing.

IV. Lastly, I believe the children in our common schools should learn something of English literature.

All the larger towns of New England have public libraries. In them is treasured the untold wealth of the noblest literature in the world, "rich with the spoils of time;" and on the same shelves with all this truth and beauty, stands the ephemeral trash of to-day. Should not, may not, the children be taught how to use the library? Heirs of such treasures, shall they be left to starve themselves on trash, or poison themselves on vice? For most of our children the school offers the only opportunity for making acquaintance with good literature—for even learning that it exists.

By the study of literature I do not mean learning the lives of authors nor analyzing their style. I mean the careful reading of good literature for the purpose of loving and delighting in it; storing the memory with fine passages of both poetry and prose; making acquaintance with the great minds of all ages, not as school task-masters, but as friends for life. Let us not any longer allow "reading books" in our common schools. Why may not our children even in the common schools,—nay, most surely in the common

schools—read bible stories, fairy tales, folk-lore, fables? Why not learn Greek mythology from "The Wonder Book," "The Age of Fable," Church's "Tales from the Old World," and Homer? And our own Norse myths from Sir Thomas Mallory and Tennyson? Why should not sentiments of heroism and patriotism be nourished in their young souls by the reading of Plutarch and Froissart, the story of the Cid and heroic ballads, as well as by well-written lives of our own heroes? Let us introduce them to Abbott's wonderful series of biographies, and to the fascinating pages of Irving, Green, Motley, Prescott, and Parkman, and the older classes to our delightful "Modern Statesmen." Let us give added reality and pleasure to their nature study by the reading of some of the many good books for children on natural history in its many branches. Among the poets, Homer and Spenser are wonderfully adapted to elementary schools, but almost all of that melodious host have something for the children. I have seen a class of about twelve read the whole Iliad with delight, and a first primary grade listen with rapt attention to Burns's "Address to a Field Mouse." We need not be too anxious about their understanding it all. The imagination and emotions may be stirred by that of which the intellect can give but imperfect account. We all know how our Bible and our Shakespeare have unfolded to our ripening experience; so if a child gets his child's truth out of a great book, let us be satisfied and feel sure that that is his best preparation for finding its larger truth in later life.

The mention of literature confronts us with the fact

that in many of our smaller towns where there are as yet no public libraries, the material for the study is lacking—there are no books. We can only say that there are no books because in the past there has been no demand for them; a demand on the part of the teachers will sooner or later create the supply. In the meantime, books for the elementary study of literature can be had for very little money. Most of our leading publishers are making editions of English classics at a cost of from two to twenty-five cents each. It is a pity that so many of them are injured by a style of annotation that is at once an insult to teachers, and a detriment to pupils. But even with such notes they are things to be thankful for, and greatly simplify the answer to the question, "How shall we teach literature in the common schools?"

And let us remember that we do not need many books,—two copies are enough, better than more, I think—one for the teacher, and one to be passed from hand to hand in the class.

The method is by reading, simple reading, with but little comment or criticism; an occasional expression of admiration or pleasure, sometimes a question to direct attention to a passage of unusual truth or beauty; but ordinarily it is wise to remember that a good book needs little comment.

The interest of the class will be heightened if the teacher takes her turn in the reading, or more than her turn; the little ones, particularly, are helped and stimulated by listening to good reading. These reading lessons should always be reproduced, either orally or in writing; not by paragraphs, which only serves to

break the train of thought and keep the mind in a perpetual jolt, but in large masses, the whole, if not too long, at least whole chapters or complete incidents.

In the selection of books we need to guard against too weak a literary pabulum. The young people of to-day are, almost without exception, reading what is beneath their capacity, both intellectual and moral. Most modern juveniles are trash, many, even of those which fill the Sunday-school libraries, are vicious, but even the good should not be found in the hands of children over thirteen. There is a great work to be done in our schools in toning up the literary taste of the children. The child or young person who reads only, or largely, juvenile books, will grow up with the meager vocabulary and the feeble style in speech and writing which are the natural expression of narrow thought and shallow feeling. Children should read *up*; they should lay aside a book with a healthy mental and moral glow similar to that which their muscles are familiar with after vigorous exercise.

Such, fellow teachers, is, in imperfect outline, the kind of English teaching which I believe could and should be done in our common schools. The mechanical parts of our work we are doing tolerably well, the vital part is most neglected. It seems to me a very questionable benefit to teach a child how to write but not to teach him how to express his thought and feeling in appropriate words, or to teach him how to read, but not what to read.

But if we could send our children out from the common schools with a good vocabulary, the power to express themselves correctly and fluently, and a genu-

ine love of good books, they would be, so far as intellectual training goes, well started in life, having an impetus in the right direction, and the means for unlimited progress.

DISCUSSION.

The discussion of Miss Hyde's paper was opened by MARA L. PRATT, M. D., of Malden, Mass. She spoke as follows:

There is nothing, it seems to me, more encouraging in our whole educational outlook, than a certain little subtle change that is creeping even into the very terms we are beginning to use to designate that subject of school-work which is said to teach us to speak and to write. That subject away back when we were pupils in the public schools was called grammar—and grammar it was—hard and dry and analytical.

Then by the time we had come to take our places as teachers in the public schools—lo, a change. Grammar was now a dream of the past. Not one hair of it was left for us to cling to. Everything was language now. No one knew exactly what it was, but the language craze had set in, and language was for a time synonymous to the teacher with chaos, nebular, and protoplasm—infinity, cosmogony, astral lights—any of those words expressive of boundless possibility with never a positivity.

How we drifted and wandered; how we groped and floundered during that period of language teaching. None of us are likely ever to forget it. Many of us nearly wrecked our little school-ships amid those lan-

guage breakers. There were no books, no guides, no aids. Nobody could give us any real definite knowledge of what was to be taught under this new term language.

Language seemed to mean capitals and stories; and letters and stories; periods and question marks and stories; semi-colons and wonder marks and stories—stories, stories, stories—stories original, stories representative, stories condensed, stories diffused—till the stories of our pupils, the stories of our dreams, waking and sleeping, grew in number and in dread equal to

> "The small rats, the large rats,
> The lean rats, the brawny rats,
> The brown rats, the black rats,"

of the Pied Piper of Hamlin.

It was a happy day to teachers—a day of devout thanksgiving—when at last certain educators—our good friend Ellen Hyde among the first and best—gave to the teaching world those new language books that were neither grammar nor story books but a happy compromise between the two—books that soon proved themselves a power to stop the educational pendulum in its mad careering between the too definite somethingness of grammar and the more indefinite nothingness of language.

And speaking of Miss Hyde's books, brings me back to the new terms that are creeping into our educational vocabulary.

It was a happy thought—it was a prophesy—perhaps Miss Hyde builded better than she knew when she named her book—not Language Lessons, nor

Essentials of Grammar, nor Word Studies—but simply and elegantly, "Lessons in English."

Lessons in English! English! There is the one word that is big enough, broad enough, comprehensive enough to express the whole field of language work, oral and written, from the child's entrance to the kindergarten to his graduation from the broadest course of training in oratory, rhetoric, and literature that our highest American University can give American pupils.

We have begun to use it. This institute, first always in the ranks of progress and best thought, has used it appropriately in announcing, in the circulars that have brought us together, that this is an English day: that Miss Hyde will speak on English in the elementary schools; that Master Thurber will speak on English study; that Prof. Sears will speak on English in the colleges; and then, just note the sequence, that Prof. Johnson will speak on the development of literary taste for literature, the natural sequence, is it not? of a right teaching, of right training in the study of the long-course English.

I wish there were time—I would like to burlesque the thing we call English as it is taught in our public schools.

A little girl in my own school not two years ago, on being asked what this language was that she had so much to say about, answered, "Language? Why language is capitals and periods and things."

Capitals and periods and things! Unwittingly the child had told the truth. Language work in our schools *is* capitals and periods and things—especially things.

And, alas, children and fools will tell the truth of their teachers.

And why was I teaching language in this limited way? Well, perhaps because I didn't know any better. Perhaps, because, like you, I was filling the demands of the prescribed course of study which in substance said, capitals and periods and things.

But all that was in a Massachusetts city whose school-board had not yet awakened to this new term—*English*. When it has, there, as everywhere, everything will be changed.

When that city has awakened there will be wonderful changes in its public schools. For example—the study of numbers will be thrown out of the primary grades. Bryant and Stratton effects in penmanship will not be demanded of five-year-olds. "I see a cat," drilled, drilled, drilled, into the child, with its fetich of a capital I at the beginning and the never-to-be-neglected period at the end, will not be held as the ultimatum of life's deepest purposes,—the one sign manual for admission to heaven and the "next grade." All these burdensome and unnecessary subjects will be thrown aside to make room for the teaching of *English*.

Now to teach English, the child must *first of all* learn to read.

Those first primary years should be devoted to reading, reading, reading, that the child may, as speedily as possible, be gotten over the mechanics of reading—a dreadful period at its best—one which, like his teething, since it must be done, it were well it were done quickly.

We cannot afford at this period of the child's life to bother too much with numbers and penmanship and capitals. He has no need for them—no use for them. But he does need to read; to read—he has use for that—his craving for it proves both the need and the use.

And he needs good reading, too. Tell me, what is there more pitiful, more stultifying to a wide awake boy or girl of seven or eight than the silly, senseless, duck and drake stories that we are forced to put into their hands to read, simply because they have not mastered the mechanics of reading—because they have no vocabulary, because they cannot recognize words. Such children can comprehend when the teacher reads *to* them, Grimm and Andersen and Arabian Nights, and are alive to stories of history and biography. But when they read for themselves, alas, it must be the story of "the two little girls who went to walk in the green fields, or the good dog Prince, who came to be a playmate for little Frank."

Then let us, first of all, hurry the child's vocabulary to keep pace with his comprehension. Teach him to read for himself. He can do no intelligent work in any line until he can recognize words, until he has a vocabulary, general and generous, at his command.

But when at last this is done, when he can recognize words, and has acquired a vocabulary, what is there, pray, that he has not the open sesame to? He is ready now to study English—indeed, he has already begun the true study of English.

So much for reading. But that is not all. There 's the language. We will not dignify it yet with the

name of English. Can nothing be done in this line to uplift and broaden our conception and our treatment of this subject?

As it is taught to-day, it seems to me we get very little beyond the mechanics of it,—that is beyond the capitalizing and the punctuating. We make those the be-all and the end-all of the work.

Now, all this is well enough—we would not depreciate it—we will all agree that a poorly capitalized and punctuated letter is a very poor thing. Still there is nothing so difficult in the subject that we need to drill, drill, drill, upon it from the kindergarten to the high school. Systematically and intelligently presented, it is a subject that may be thoroughly mastered by any pupil in the last two or three years of his grammar school course. Alas, we do waste so much time and we make such hard work of teaching to little children subjects and matter, that, if we would but wait, they would acquire naturally and easily—for themselves—a few years later.

This last school year, with its President Eliot impetus back of it, has marked an epoch in the history of education. Everywhere and upon all sides, we are hearing of the inroads the grammar school proposes to make upon the high school—of the spoils she proposes to capture—its algebra, its geometry, its Latin, French, and German. Now there is one such gem, lying just upon the threshold, that the grammar school, in its exultant glee, has entirely overlooked. The name of that gem is Rhetoric. Why is it that the high school is permitted the monopoly of that subject?

In our grammar grades, language should mean rhetoric; and rhetoric should be a grammar shool study. Concomitantly with the analyses of Snowbound why not call attention to the figures of speech —the similes, the metaphors, the allusions—and assign, as work for the next lesson, a bringing together from other sources similar similes and metaphors and allusions.

Along with the parsing of the inevitable, "Sink or swim, survive or perish," why not call attention—and that, too, in a systematic manner—to the construction, the force, the climax, and so teach such a recognition of style and strength, as shall stand to the pupil for ever after, itself a critique upon all lesser and weaker writings?

With such training in figures of speech, in construction and in style, month after month in our grammar school, how long, think you, would there be need, either for laws or for homilies, upon the subject of teaching literature?

Now, one word more and I am done. There 's the spelling. How long, I wonder, before we are to wake up to the realization that spelling is not an abstract, isolated fact by itself; but that it is the natural concomitant and correlative of reading, and that both together must build up what we call English.

If there is anything in our educational practice that is altogether wrong, illogical, unpsychological, it is this way we have of padlocking each separate brain cell. Our children are grown up men and women before it occurs to them that each study is closely related to every other study—so closely related that

they then look back in wonder that the teacher did not teach them together.

The teaching world waits to-day for some sort of a word-book that shall be a speller and an etymology combined; a book in which words shall not only be spelled, but their origin be explained; their force be illustrated; their synonyms and their opposites be compared; their applications be demonstrated: in short, a book so arranged that the pupil cannot fail to absorb from it an admiration and respect for the English language, a recognition of its force and elegance; and above all, such a familiarity with its vocabulary, that, when he speaks, so strong and clear and forcible shall be his English, that he shall stand forth a modern version of the man, who, being ruler of his own tongue, is greater than he who taketh a city.

VII.

THE THREE PARTS OF ENGLISH STUDY: THEIR CORRELATION IN SECONDARY TEACHING.

By S. Thurber, Master in the Girls' High School, Boston.

The term *English*, in its modern pedagogic sense, evidently has a manifold denotation. It means several sciences, two or three arts, and a variety of disciplines related more or less closely to the prevailing ideals of esthetic culture. In the upper education this diversity of content is coming to be recognized in the multiplication of professorships with distinct names and functions. In the secondary education this same diversity exists, but cannot assert itself, at least as yet, as a determining principle of school organization. What the little child must do in the native language is tolerably clear; what the college student may do in the same field is well conceived and provided for; what the high school youth had better do in his English is still a question for discussion. The intermediate parts of a subject are naturally the slowest to take shape because they are related in two directions and have double adjustments to make; just as the middle one of three walkers, if his companions approach each other, is squeezed, and if they diverge, is embarrassed to know on which side to close up the gap.

The many possible lines of study and of teaching

that lie within the field broadly denominated *English* may be classified under three heads, as follows: First, there is the *literature*—what the race, from generation to generation, reads—the spiritual bond that links the centuries together and gives singleness and unity to the records of the Anglo-Saxon mind. Secondly, there is the *language*, which everybody knows naively, but which educated persons should, to some extent, know historically, so as to become free from the petty tyranny of school grammars and rhetorics. Thirdly, there is *composition*, or the art of writing English prose with due regard to the conventions of good taste as formulated in the newest manuals of lingual etiquette. I might add a fourth rubric—*elocution*, or practice in the speaking of English; or composition and elocution might properly enough be embraced under a common designation—*expression*.

If the English teacher is left to his own devices, he must ask himself what he shall do with these several elements or possibilities. Shall he devote his time more to one than to the others, or shall he treat all three just alike? Shall he consult his own tastes? Manifestly he must give his pupils what they most need. If these pupils come to him with any arrearages, he must try to bring up these shortcomings, though such a procedure may cross his dearest convictions. But if the high school teacher follows good lower grades and no serious arrearages appear, he must consider, of course, on more general grounds of pedagogy, how to make his teaching most fruitful of good to his pupils, and this is really the question we have to consider.

If the English teacher is *not* left to his own devices, that is, if he is fitting for college and has to consult a scheme of requirements, his procedure ceases to be a problem: he must do what the catalogue prescribes he shall do. His situation is not interesting in the scientific sense, for his ambition is not to apply principles of psychology to the teaching of a special subject, but merely to get his pupils through an examination of a peculiarly narrow and exactly predetermined and foreseen range. His function is made as mechanical as possible. The thinking that a good methodic presupposes has been done for him. His stimulus to exertion is the lowest one that is used in our educational system—a reputation for examination successes.

Now the college instructors, finding that the boys sent to them write their English ill, have made their examinations bear especially upon composition. Fitting for college in English means little else than drill in writing. It is very natural that a teacher of marked and notable success in this work, like Mr. Groce, should come to the conclusion that in English teaching the main emphasis should be laid on composition. His prepossession in favor of composition as the chief element of such teaching seems to be, in Baconian phrase, an *eidolon specus*, an idol of the cave, a bias pertaining to the vocation. Mr. Groce not only accepts for himself the conditions imposed upon him by his situation as a teacher of English fitting for college—which of course is the only attitude compatible with happiness—but he recommends these conditions as universally wholesome. The wisdom of this recommendation seems to me questionable. Many teachers,

making the most careful diagnosis of their pupils' mental state, fail to find exceptional deficiency in the power of expression. Certainly, in the planning of courses of study the opportunity of training in spoken and written language has not been neglected. All schemes of work profess at least to make great account of composition. It is, therefore, well for us to be cautious about accepting such a broad generalization as that which assumes that this subject is in a peculiar state of backwardness. For purposes of discussion such a postulate would manifestly be a begging of the question. I prefer to imagine myself and my hearers in the ideal posture of secondary teachers receiving pupils from good primary schools, and having no other concern than to give to these pupils the best additional training in English that is possible in secondary schools.

The correct writing of English is a matter of training, of habit. It is futile to postpone it to the high school. It is futile to assign training in composition to some one teacher or to certain hours per week. Expression, oral and written, is the great business of school life. It is no one teacher's art or mystery. Pupils always express themselves as well, I will not say as they have been taught to, but I will say, as they have been required to. If this sentence sounds epigrammatic and so seems to need a little modification, I willingly grant that there is the personal equation to be allowed for, even in children—the usual diversity of minds having different gifts. But I insist that in composition, as in everything else we teach, the law holds good that skilful teaching is effective; and that children may be expected, at every stage of their progress,

to be as well off in composition as they are, for example, in number and geography.

The most heretical thing I am going to say in this paper is this: that children in our better school systems are fairly up to the mark in the matter of expression, and that any theorizing that assumes sad deficiency in this respect starts from a wrong premise and must lead to wrong conclusions. I know how much the fashion it is to berate the schools for the poor work they do in composition. This fashion got its cue from a few college instructors who knew no better than to assume that the results they got in the entrance examinations which they prescribed were conclusive and sufficient testimony as to the character of the work that had been done in the schools and as to the candidate's total achievement in English expression. Of course the examiner tends to exalt examinations. To him they are apt to seem infallible. But it is our duty not to be imposed upon by things pretentious and assuming. Just consider for a moment the college entrance examination in English. The examination is one of many crowded together at the end of the school year. Many scores of young men are assembled at tables in the same room, where, beginning at the same moment and ending at the same moment, they write on the same prescribed topics. It is one of the humors of recent collegiate lamentation that a Harvard professor, having thus carefully provided all the conditions favorable to the extinction of originality and the repression of excellence, should confess himself "amazed" at the "tedious mediocrity" of the writing he gets from his examinees.

Now I will be heretical once again, and say, that young people, in order to write well, need favoring conditions, just the same as mature people do; that the wise teacher aims to secure these favoring conditions for his pupils, just the same as magazine writers, authors, professors addressing the public, aim to secure these favoring conditions for themselves, and resolutely refuse to write unless they can command them. These conditions favorable to good writing are, of course, solitude, quiet, a mind fresh and unwearied by previous labor, freedom from worry as to time, interest in the subject, and, above all, the consciousness of having something to say that is original and worth saying. None of us but is tedious and mediocre when, having nothing to say, he is nevertheless compelled to write; none of us but is bright and fluent under the stimulus of conviction and full possession of the theme. I cannot imagine any justification for that procedure which, under the name of a college entrance examination, denies to youth all the conditions essential to good writing, and then expects them to write well.

The fact is, composition in our schools is not a specially belated department. American youth are fairly bright, and their compositions, when not artificially thwarted and repressed, are as bright as the youth. It is folly to proceed on the assumption that in this particular of school work there is great defect, which, at the expense of other desirable elements of education, must forthwith be made good. In other words, it is fair and reasonable to debate, from the point of view of the secondary education, the question

how to apportion the several divisions of English teaching, and to do this while abstaining rigidly from that unhandsome practice, so apt to mar scholastic talk and scholastic writing in these days—the practice of bewailing the inefficiency of the schools below our own in which our pupils were prepared. In our school system, as in the Greek verb, it is usual to throw the accent as far back as possible. Let us reform this custom altogether.

Yet I am no optimist. I am not going to paint with rose color the achievements of our schools in their teaching of English. It seems to me we are working in some respects not altogether fruitfully, and that we need to consider the feasibility of certain reforms in the method and organization of our English instruction.

In the first place, as I have already hinted, I doubt very much if it is desirable to have a special teacher of English composition. The existence of such a teacher impliedly frees all other teachers from the responsibility of exercising any supervision over this important part of education. Composition is rather analogous to the cardinal virtues, to truthfulness, punctuality, and neatness, than to the special disciplines, like elocution and drawing. Should one teacher in a school neglect the cardinal virtues, we should all agree in recommending that such teacher be at once discharged. Yet all teachers but the one who has charge of English neglect composition and are not deemed to leave their duty undone. Pupils write and speak English for every teacher. Every time a pupil writes or speaks he composes. As I

have said, expression is the great staple in the commerce of the school-room. Expression in English is the universal tool in every department. Everything is taught through the medium of the English. Every written examination is a composition, at least of a sort. Every teacher reads pupils' written work. Is it reasonable that only one teacher should be expected to correct and improve this written work? If nine teachers overlook defects of form, leaving it to the tenth to note and correct such errors, how deeply is it likely to be impressed on the pupils' minds that form, expression, is an important element of written language? How upright a man is he who deports himself correctly on Sunday after a week of immoral and vicious practices?

The chief obstacle to good issues in the high school teaching of English is the teachers who do not teach English, but who take in written work and hand it back without effectually noting faults of expression. The presence of such teachers in a school is a perpetual slur upon the English teacher, making him appear hypercritical, petty, formal, and external in his function. What is good enough for the others is not good for him. He is hard to please, and spies faults that do not show themselves to the more generous eyes of the rest.

It will be noted that I am not speaking of the scientific teaching of rhetoric in college, but only of such practical training in English expression as is proper to secondary education. In the secondary school I surmise it would be a great gain if the teacher of composition could be abolished and his function be assigned

equally to *all* the teachers of the school. No pupil should get along in any study who did not write good English in his exercises in that study. Poor composition should never be tolerated under the pretext that the teacher under whose eye it comes is not called a teacher of English. I have proved in my own experience that pupils will write well as soon as they find that they must, and that many pupils are ready to write ill as soon as they find that they may with impunity. There should be no impunity anywhere in the school arrangements for careless writing. The basic faults of English writing can be extirpated at once by the combined efforts of all the teachers. A pupil taking a high school diploma while still in the habit of careless writing, should be an impossibility. The only safeguard against the growth of habits of slovenly speech and slovenly writing is a high public spirit pervading the entire corps of teachers in favor of good English. If the teachers are agreed on this point, their sentiment will become the ambition of the school. Villari tells us that at Eton the young men write elegant English, although the school has no English teacher. The example of cultivated gentlemen and ladies is the only efficient teacher in a subject of this kind. Imagine a school in which the vice of untruthfulness should be getting a footing. To whom would it occur that such a calamity would best be met by appointing a teacher of veracity? Suppose we should hear it argued that very few persons perceive the value of truthfulness so clearly as to be competent teachers of it, and that we must look about for some one who has had special training in this accomplishment:

Everything else taught in a high school is special—a person may or may not have studied it—but the cardinal virtues and the mother tongue are general—everybody must pay them homage.

So long as there is a special teacher of composition, who requires "compositions" under that name, the idea is inculcated that other writing is not composition, but something else, exempt from the rules of good writing that are in force in that peculiar exercise. This notion is most pernicious. I believe it is held by many teachers. A composition is often a terror to a pupil who is wont to toss off other writing with utmost ease and freedom. A composition is often regarded as a dress affair, a solemnity, to be opened with proper introduction in set phrase, conducted with all formality through decorous paragraphs, and finally dismissed with a literary bow and flourish. The conventional school composition, for which occasion is artificially created, and which seeks to express that which no one desires to communicate, had better be abolished. Natural and needful composition, however, in its multifarious forms, is to be cherished. Composition, remember, is everything the pupil, in the various processes of instruction, has occasion to write. In any large high school writing is constantly going on. I might almost say that composition, in a school where modern methods are practised, engages half of the school activity. I would have it better looked after by all the teachers. It is now a waste article, a "by-product" incidental to other manufactures. It should be utilized.

Thus I have tried to make clear what I would do in

our *trivium* with composition. The function of the English teacher should be principally to deal scientifically with the language and the literature. Do not be dismayed by my use of the word *scientifically*. Even grammar, you know, has its pedagogic bearings, and grammar is a fully developed science; and literature, which, in the primary school, has been contemplated merely as a collection of pretty things to read, is really an organic whole, that has had a historic development, and is therefore proper material for scientific treatment.

Just as it has come to be generally recognized that the true way to achieve clearness, force, and elegance in our English, is not to study the rules laid down in the rhetorics but to become familiar with writing that is clear, forcible, and elegant, so it is now almost universally conceded that the true way to attain correctness is not to peruse the rules of the grammars, but to habituate one's self to correct language by hearing and reading correct language as much as possible. I am far from contravening these modern conclusions. Grammar is a useful discipline, not because it can teach the art of writing and speaking correctly, but because it awakens the philosophic consciousness through study of the forms of thought in their concrete embodiment. I would have grammar taught in the high school English course. But let me say at once that the grammar I conceive as entitled to this recognition is by no means the traditional grammar of the grammar schools. We want a grammar wholly without rules, but abounding in examples. Rules spoil a grammar by converting it into a book of etiquette.

Rules have no more place in a grammar than in a history. I conceive grammar solely as a science, not at all as an art. This science of grammar is very fundamental to a great range of thinking concerned with conceptions of things spiritual. What the study of Latin does for a person who forgets his Latin but retains therefrom a certain habit of linguistic insight, that the scientific study of English grammar is equally fitted to accomplish for him who never studies the ancient language.

The high school pupil should become familiar with the sentence, and with the terminology of sentence analysis. Modern literature presupposes this familiarity. The discipline of grammatical study opens a vast range of discussion always occupying serious thinkers. I know of no key that turns so many locks.

Then the high school study of the mother tongue should also include a view of old forms and usages—that is, it should be to some extent historical. Modern idioms, the despair sometimes of grammar school attempts at parsing, should be traced back to their origins, where they all find their solution, in order that the utter needlessness of parsing them at all may be seen and felt. Pupils who study Latin, French, or German, should be led to perceive affinities between those languages and their own, and to see how languages shed light on each other, because one language is, in some respects, more primitive than the others, and so betrays how these were once shaped. I would certainly, without delay, not waiting for a future happier than this present, have our high school youth brought face to face with English as old as Wycliffe

and Chaucer. For the study of English older than the fourteenth century I am willing to abide the day when our colleges shall have given us teachers in sufficient number competent to take classes through Old English. At present this study is curiously regarded as too formidable for high schools, which, nevertheless, are wont to think they can teach Latin and Greek.

It is not an uncommon opinion among scholars that schoolmasters are the deadliest foes of the English language. Professor Lounsbury, for example, in his recent work on Chaucer, speaks of "that schoolmaster English whose professors are now found in every hamlet, and cast a gloom over nearly every fireside." The trouble is, the typical schoolmaster is a man with a mania for correcting, who cannot let well enough alone. A better day is dawning upon us at last—thanks to the new zeal for studying our earlier literature—and naturalness and freedom in language, as in so many other things, are gradually coming into their rights. But it is still possible to meet teachers who, even in their spoken speech, affect that dead level of accuracy so recognizable as the academic style, and who dread genuine colloquialism that cannot be parsed as they would a piece of profanity. Lack of culture may show itself in excessive precision no less than in laxity of speech.

We shall never have a generation open-minded towards spelling-reform till we are surrounded with people competent to see the bearings of the question, and trained to such a degree of independence that they are willing to break away from the tyranny of the Mrs. Grundy who presides over our orthographic cus-

toms. And yet I believe there are many who would at once begin to spell reasonably were it not for the labor the change involves in the learning of new forms.

This secondary teaching of the native language, which I have briefly outlined, is, unlike the teaching of composition, eminently the work of a special teacher, and should be one of his two peculiar functions. The other should be the teaching of literature.

And although I come to speak of literature-teaching last, and am going to speak of it most briefly, I urge that its proper place in the hierarchy of English subjects is far and away the foremost in every important respect. According to a person's culture is the part that books and reading play in his life. Men by nations and by cities pile up libraries for the intellectual nourishment and the recreation of themselves and their children. In every community the true civic focus and hearth-stone is not the church or the school, but the public library, which has something for every age and all imaginable sects, provided only the applicant can read and knows something about books to begin with.

Already in the primary school the child has learned to read poetry and imaginative prose with relish, and to recognize by their subjects and styles of expression a few of the writers of this century. This work is to go on and greatly enlarge its scope by taking the learner backward in time to the age of Chaucer, and by opening up to him the new departments of thought that have found expression in literature suitable for the eager and expansive period of puberty. At this most interesting and impressive crisis in the young life

the responsibility of the teacher becomes unspeakably great. To offer the juvenile mind, at the moment when it is becoming vaguely conscious of its capacities and beginning to see its relations and its duties to humanity with a fullness hitherto never surmised—to offer to the youth at this most receptive, most teachable era of his growth, more smartness and alertness in composition, more correctness in spelling and punctuation, is like putting off a person under conviction of sin with a manual of deportment.

It is impossible, of course, at this time, for me even to outline a course in literature for secondary schools. Let me say, however, that such a course should prominently include these two aims. It should survey our later literature, not in fragments, as the wholly unphilosophical college requirements insist, but as an organic growth, having its essential conditions in general history, which it largely explains, and in which, in its turn, it finds its own explanation. In their examination requirements the colleges reveal their opinion of the high school capacity. This opinion is that very severe algebra, very severe physics, ancient languages and history may be held to be within the competency of high school youth, but that English literature must be presented to them in the primary school way, that is, in unrelated fragments, just to make sure that they read something.

The high school course in literature, again, should train to literary research. Or, I might say, it should teach how to use libraries, how to pass from book to book to get light on difficulties. I have found that pupils take to this work with astonishing alacrity.

But the other day, two pupils, having exhausted Bates Hall on a certain subject, pushed their inquiries by letter, without their teacher's knowledge, to the British Museum, and promptly got the information they sought. One advantage of this kind of activity is that its objects are very definite, and success also is definite and brings high elation. Composition is elusive: no two teachers agree as to kind and amount of correction. One teacher's own composition another teacher calls wretched. Even the great writers of prose, even the great writers of rhetorics, can be abundantly corrected, if one likes this work. All is here indefinite and vague. It is charming to have something so clear and unmistakable to do that one surely knows when one has done it and can put it in one's note-book as a genuine achievement.

RECAPITULATION.

The ambition of teachers to get their pupils through college examinations is a useful educational motive only when the examinations are planned with consummate skill and wisdom. Examinations that move in ruts will engender narrow and petty coaching-methods in the schools. Especially in the study of English, with its many stimulating invitations to intellectual activity, is it lamentable that one special accomplishment should claim preëminence. Correct and fluent expression is a gift, or an acquirement, wholly ancillary to thought and observation. Where the environment is good, expression may be trusted largely to take care of itself. In the secondary school the refinements of rhetoric, such as demand the care of a special teacher

have no proper place. As all teachers equally listen to pupils' English and equally read pupils' English, so all teachers should have equal responsibility for guarding pupils' English against elementary faults. The philosophy of expression may be left to the professor of rhetoric in the college.

The knowledge most directly fundamental to intelligent control of one's own expression is a historical acquaintance with the language and the literature. The manuals of rhetoric fill the youth's mind with prohibitions of objectionable words and constructions; but the fund of diction on which the youth must learn to draw is our standard prose. The main thing is to become free of the English vocabulary, and to acquire the habit of elegant choice and construction by contact with interesting writing.

Hence the English teacher's function should be to teach, historically, the language and the literature. Composition he should share with all the other teachers in the school. The mere fact of graduation should be a guarantee of the possession by the pupil of good habits of composition. This guarantee it would be foolish to understand as implying that the graduate is competent to write brilliantly on any subject: it should mean that he is able to express clearly and neatly whatever matter his mind commands with adequate fullness and certainty.

DISCUSSION.

MR. J. W. MCDONALD of the Stoneham (Mass.) high school, opened the discussion of Mr. Thurber's paper. He thought that for the unsatisfactory condition of attainments in English, the colleges were partly to blame. Somehow, college students get an enlarged view of the importance of every language except English. Young college graduates applying for positions in high schools, almost invariably give as their preferred subjects, Latin and Greek. Rarely does one mention English, and then, in such a way as to indicate that it is not a first love.

The study of English is, first, the study of ideas. There must be in the mind, clear and well ripened ideas behind the language. One cannot speak well from mere information. He must *know* what he is to talk about; he must have thought all about it and through it, and have such a mastery of the subject matter that language will be unimpeded by invention. The question of teaching English, is a question of teaching every study in school. What better chance to teach English can be found than in the regular studies? Are they not taught to impart ideas? And if the pupils get their ideas clear, why may they not be taught to express them? When all subjects are taught as they should be, the distinct "English teacher" will be unnecessary, or rather every teacher will be a teacher of English.

Next to clear ideas comes the knowledge of words and idioms. They must be ready at hand to express whatever meaning may come to the mind. We must

not undervalue this faculty of a correct knowledge of words, their "sense," force, feeling, and exact, entire meaning. This can only be absorbed by living in an atmosphere of good English. The ear is the natural avenue for acquiring language. Reading has much less influence than we generally consider. Children speak as they hear, and if you want literature to influence their language, you must read to them. Many things, especially the newspaper and cheap novel, have vitiated our sense of the value of correct English, but the schools are chiefly responsible for the dulled sensibility to the meaning and force of words among educated people.

From four to six years spent in "literally" translating Latin and Greek into a jargon that is nothing but the ancient idioms expressed in English word sounds, leaves an effect which can never be eradicated. It is not only a wrong translation, but it is an irreparable injury to English. The study of a foreign language can and should be made a most admirable means of teaching good English.

VIII.

ENGLISH COMPOSITION IN COLLEGES.

By Lorenzo Sears, Litt. D., Professor of Rhetoric and Oratory in Brown University.

If one were asked how English composition in college differs from the same process and production in school, he would be obliged to reply, "In the way that other studies differ in school and in college, not so much in kind as in degree." No new science of language or mathematics or history takes the place of grammar and lexicon, of algebraic formulæ, of the standard chronicles and annals and histories. What really constitutes the difference is the wider field and the longer perspective acquired by months or years of growth and progress. Now and then there may be some new vision of an unfamiliar truth, but for the most part it is the same round of observation and reflection and reading over which the world travels as boys and men year after year, with much the same result at each stage of the seven ages; and the diversity is simply that of the whining school boy, and him of the woeful ballad to his mistress' eyebrow, and him with eyes severe, full of wise saws and modern instances. It is the variety of growth and change,—of the blade, the ear, and the full corn.

Much that I shall say, therefore, will be as true of

school as of college composition, and will doubtless be largely a re-statement of things with which you are all familiar.

The large subject of English Composition must be narrowed to the limits of the half hour, and, I take it, restricted to that practical side of it which is of chief interest to the instructor in his efforts to help the pupil to think rightly and to express his thoughts clearly, forcibly, and elegantly, if need require.

If, accordingly, I were to name one feature which should belong to college composition more than to that of the school, it would be in the department of Invention, or of finding what to say as distinguished from contriving how to say it. I am aware that in giving precedence to this process I am apparently reversing the order laid down in many rhetorical treatises; but I shall partially avoid criticism by adding, that when the young man has finished his preparatory course in most of our schools he has had an opportunity to learn the elementary principles of expression, and should be ready to go on toward the advanced process of thinking or invention proper. For to the majority of those entering college rhetoric is no new study. Often it might be wished that it were, or that the time that has been spent over some text-book which colleges are compelled to use for the sake of uniform instruction might have been given to more elementary studies, especially in the direction of the less ambitious but none the less essential matters of punctuation and sentence construction. Or if these should be well mastered, there remains the wide field of word-study. Proficiency in this would be of the greatest assistance

to the advanced student when he attempts to say one thing and succeeds in saying another for the lack, not of a word, but of the right word, which a moderate acquaintance with synonyms might have suggested. Such knowledge is of more value to the beginner than any incipient style that he is likely to learn from rhetorical precepts. Instead of this large acquaintance with equivalent and varied terms, phrases, and sentences, the youth coming to his English entrance examination is ready to define a simile and a metaphor, may even explain synecdoche and metonomy, but will write "brave" where he should have written courageous, will put "latent" for dormant, and "gleam" for glitter, and "penetrate" for perforate, and "reputation" for celebrity, and "reservation" for reserve. Worse than this, his lack of accuracy will be chronic with respect to the orthography of his "principal principles," the adjective and the noun being freely interchangeable in spelling. Still worse, the mis-pronunciation of certain words will stick to him like burdock. His "*dis*course" will be without "*re*sources" and full of "*de*tails" which it usually takes three years to get accented according to the proper accent; and if he does not recall the prefix in full force under the oblivious inspiration of Commencement day, the department of rhetoric counts itself fortunate.

For these reasons, therefore, it might seem that too much attention cannot be bestowed upon the fundamental principles of word study and sentence construction in preparatory schools, leaving larger rhetorical attainments to later years when they shall be more needed. In this way the topic of Invention will

be taken up at the beginning of the college course in an order not so unnatural as to violate any logical sequence; for the freshman will have sufficient facility of expression to meet all the requirements of his inventive faculty, and to enable him to enter at once upon the more important task of learning to think, before learning to adorn trifles with the elegancies of speech.

I am willing to concede all that can be urged concerning the small value of college thought to the outside world; but must it therefore be granted that expression is the only exercise in which the student should be encouraged at the start and until his graduation thesis is to be written? According to our theories of development, thinking ought to keep pace with writing, and matter to bear some relation to manner. The truth is, that composition is too complex a process to be constructed piecemeal like a machine—one part now, another next year. It is rather a growth in which material must be gathered and its form determined simultaneously. Otherwise, the writer becomes a copyist word-maker, and thinking a process of comparing shades of meaning—an elementary process which should have been cultivated in school days, although never to be abandoned. Accordingly, if a man is ever going to conduct orderly processes of thought, it is high time that he begin the work when he enters college, just as previously he should have given his entire attention to his vocabulary and diction, as preparatory to accurate thinking and exact expression of such rudimentary ideas as he may have.

Let the *rudimentary* character of these early thoughts receive strong emphasis in this statement; for here,

it seems to me, is the solution of the difficulty involved in the oft-repeated assertion that Invention is no part of rhetoric, or at least, belongs to some other science. Indeed, invention is often left out of instruction through the supposition that it cannot be taught as well as expression; that the thinking power is a gift like the gift of rhyme and song, which if a man happens to have he does well to cultivate it, but if he have it not, he may compensate for the lack of it by cultivating expression the more diligently,—a thing which all may do.

This fallacy is upset by a moment's reflection concerning the thoughtful men we have all known of few words and graces of speech; and their opposites, the voluble men, whose thinking is characterized by abundance rather than profundity. But no one will say that it is easier for the silent man to become fluent in speech than for the loquacious man to become reserved and thoughtful, that is, if the sum total of intellectual forces is about the same in each.

The question, therefore, Can the student be taught to think, as well as to write and speak? becomes an open one, if indeed there is any question at all about it. It is generally considered as beyond the province and power of rules and text-books to teach him this, but perhaps for this very reason he may be taught. Possibly, as an eminent critic answered one who asked him about the best method of reading Shakespeare—"The best way to read the great dramatist is to *read* him," so the best way to learn to think productively and profoundly is to *begin* to think. And in this process every one should begin with that which is

nearest. If he is to move the world, or even his next neighbor, he must not follow Archimedes in asking where to stand, but stand where he is. Above all, if he is going to move himself along the upward grade, he will need to begin with himself and his own mental efforts.

Moreover, thought before speech is the natural and rational order when we are in our right mind. It is only when we are out of ideas or out of temper that we speak before we think. It is not essential that our thoughts be profound or startling or even valuable, but some thought we have, of some kind, before we utter any word in conversation. Only when memory has played us false, or the brain has stopped working for a moment in extemporaneous speech, do we utter empty words,—after-dinner-speech words which are meant to have no meaning in them,—simply the effervescense of good feeling toward everybody by reason of good feeding. Under normal conditions thought always precedes speech. It ought, therefore, to be cultivated antecedently, or at least simultaneously, with the art of expression.

Much of reluctance to undertake this education of the inventive faculty may have arisen from the supposition that thoughts which were worthy of writing down should be large and dignified—possibly strange, far fetched, or even original. How much injudicious comment and criticism about the trite and commonplace may have fostered the student's dread of recording his ordinary mental processes, it is not easy to say. Generally he has no more captious critic than himself, and the sheets of manuscript that go into the fire are often

more than those that are brought to the instructor as a compromise between disgust and necessity. What we all need to bear in mind is, that the early operations of the creative faculty, like all other beginnings, need not be mighty and stupendous. If they are natural and normal, they will be small and common and familiar and trite. We should be suspicious of thoughts that are not. I am aware that it is sometimes said, that the reflections of the student are of no particular value to the community outside the college, or even in it; and that he had better confine himself to the art of sentence and paragraph making so that he may be ready to give effectiveness to any thoughts that may come to him in subsequent years. But if they are of no value to any one else, why not use them as he uses the "useless" Greek and Latin tongues Euclid's unavailable problems, and the theories in various sciences which he learns to-day and dismisses to-morrow? It may be in the same plane of utility that he try to write down in good order the view that he gets of a landscape, or of a runaway horse, or derailed train; or, again, some revelation of character, or reasons for some course of action. Such simple and plain operations of the mind are going on continually, half unconsciously, always unformulated to the thinker himself, until asked to give them shape and sequence. The crude way in which he often does this shows that the thinking process needs cultivating to get it into orderly and consecutive steps, adapting it to the medium of language which must portray, section by section, like a moving panorama, and not by the immediate presentation of the whole field at once, as in a picture.

The means by which invention is to be made efficient as a precursor of composition has already been partially indicated. It must begin with the ordinary processes of the youthful mind. Not with the commonest, necessarily, such as athletic and Greek-letter-fraternity meditations. On the other hand, there need be at first no straining to solve the knotty questions of immigration and finance. In order to acquire facility of expression we need not ask the unpractised composer to express the "Relation of Greek Architecture to Greek Philosophy," nor of "Arabic Learning in Europe to the Renaissance." Granted that these are exercises in investigation and one kind of invention; they are not the kind of subject to help him in the first steps of the process. He may compile a fair abstract from references given, but he has found nothing to help him in the present undeveloped condition of his thinking powers. He needs to work upon something nearer than "Periods of Literary Glory," or "Hopes of Universal Empire." Rudiments are his business just now, sapling ideas, rude and crude material such as every youth is full of, but too sensible to count of any value because he regards the rudiment—the sapling—as a stick instead of a future tree. But right here his work of invention begins, taking the elementary and fragmentary ideas nearest him and clearest to him, treating them as we vainly try to make him treat the grea themes which giants handle.

Sometimes he may resent such familiar topics, and say that he had bigger subjects in the grammar school; and it may be necessary to soothe his wounded spirit by calling his attention to Thoreau discoursing of the

weeds at Walden Pond, or to John Burroughs writing of the birds and flowers, or to Sir John Lubbock's volume upon ants and bees, and St. Charles Mivart's upon the domestic cat. The youth will see that it is not the profound theme which makes the great writer, but the skilled thinker who makes great the commonplace subject. Accordingly, he may be encouraged to discover first what there is in his own mind about those things with which he has had opportunity to become acquainted, be it the squirrel in the country or the policeman in the city. And if he be taken off guard before he have time to put on his essay style and literary dress suit, like Buffon arraying himself elegantly in order to write with elegance, he will do natural and creditable work in invention.

For the want of a more convenient illustration of the kind of subject with which it has been proven that the average sophomore can successfully wrestle, and withal strengthen the dorsal muscles of his mind, I may be permitted to copy a few topics which I have given to classes to write upon without previous knowledge of what the subject was to be. The normal product is a periodic paragraph of a hundred or two words, the ideal of which may be found in some of our newspapers of the highest type. Considering the time allotted, this work is much more satisfactory than some for which a month is allowed—and in some cases only an evening taken—judging by results. This improvised composition will have the errors that accompany haste, but spontaneity will seldom be lacking, and a readiness of expression such as the newspaper reporter must acquire. It might seem that such rapid

writing is the last method to be encouraged for the development of the inventive powers.

Instead of this, it is the first. The writer is driven to think about his theme more than about his words, about what to say more than how to say it. It is like the first sketch of almost any composition on paper or on canvas; it will have qualities of strength and light which would not be thought of in the cool and critical labor of revision; the bold outline will be there, natural and strong as the unhewn rock and the uncropped tree. Such freedom, however, can be secured in one way only, and that is through topics that are familiar to the whole class. To find thirty of them during the year, of which this shall be true in the case of a hundred students, is not so easy as to find a hundred themes of which thirty students know little or nothing. But they can be found if we do not look too far for them; and most readily found among the haunts of boys and men. The busy street will supply some, the woods others, the streams and the seas others still.

For instance,—the boy is unobserving who cannot say something about Devices for Attracting Customers, and what a hundred do not say will be of little value to the advertiser or the window-dresser. They do not need to consult reference-lists in the libraries, nor to run through Poole's Index to Periodical Literature to get started on the kindred topic of Schemes to Obtain Funds for Charitable Purposes at Fairs—a complete list of which allurements a class can furnish in fifteen minutes with a graphic style that would do credit to a reporter who had been feasted and fleeced

by turns. The reason is plain—they have been there, and know what they are writing about. "A limited knowledge," some will say. True; but for purposes of ready expression worth more than The Aryan Invasion, or Poems of the Cid, or The Influence of Early Romance upon Chivalry. Besides, the field of youthful knowledge available for cultivating expression is not so narrow as might seem. Try a class on Amateur Photography, or its counterpart, The Camera Fiend, or upon The Comic Paper, or My Favorite Magazine, Recreation, Amusement. From this primary exercise in invention it is not a long step to some saying or proverb whose pith some will discover in a moment, and others after a little scratching and digging. The very effort to find the point sets the thinking powers at work, and when found, the most is made of the discovery. For example, Agassiz's remark, "I have no time to waste in making money," is a little puzzling to natural acquisitiveness, but the value of scientific research soon commends itself to a student, and he rises to the higher level, for the time at least. He is the readier for the next, that "A man should be more than his vocation," although he may hesitate a little at Vespasian's remark, that "Gold smells not of its source." Wide-awake students are always ready to maintain that "The dolphin dies when it ceases to move," and busy men to understand the Chinese proverb, that "It is the dog in the kennel that growls at the fleas; the dog in the chase has no time to growl."

From wholesome principles disguised in proverbs it is not impossible to pass on to propositions which would have staggered the ready writer if the order had

been reversed. Something fair might be expected from two thirds of a class on demand after a year's practice, upon the topic of Municipal Reform, or Public Indifference to Crookedness in Politics, or Misrepresentation of America by American Writers. But such topics are too close upon the subjects for more deliberate essay-writing to be attempted as half-hour themes. Two of these impromptu themes have direct bearing upon the work itself; the Value of Mistakes is one, and the other is the remark of a surgeon to his assistant, "Do not hurry, we have no time to lose." Just here belongs the helpful criticism that shall point out such mistakes as need not be made, even when the time is so short that writing must not be hurried with the waste that comes from haste. It is in this work that previous attainment in orthography and sentence construction becomes apparent.

No one will demand that throughout his college course the student be restricted to those topics with which he is familiar. There would then be little enlargement of that inventive faculty whose first efforts are with primary ideas and knowledge. The next step, therefore, which is taken must be toward that which is partly known and partly unknown, if there is to be any increase of the power which is essential to the interpretation of higher truths. But in this advance the danger is lest it be too rapid, and the writer suddenly cut himself loose from familiar ground and sail into strange waters. He is by and by to bring philosophy down from the clouds, and from far countries their treasures of research and discovery; but at first he will not venture out of sight of native land. In this

pushing age the writer must sometimes present his discoveries before they are fully known, introducing them like new acquaintances about whom he may feel a little uncertain.

Such presentation will, accordingly, belong to a style of composition which has a less positive and dogmatic air and more of the spirit of inquiry and discussion. In this manner invention will feel its way toward the truth that lies beyond present apprehension. This process belongs to the deliberate essay or thesis, often marking a claim which the writer has staked out, rather than the underlying mine which is sometime to be thoroughly tunneled and worked for whatever it is worth. The best treatise, indeed, can be written only under the same conditions which produce the short theme, namely, so familiar an acquaintance with the subject that no help is needed from outside; but something must be sacrificed to the acquisition of investigating habits and recording processes,—in other words, to the invention which goes abroad to cull information from external sources.

What these sources are is too well understood to need extended explanation. To the college student they are chiefly books; and the second stage of invention must be among them. What use he may make of them depends upon the writer's reading power and assimilating capacity, and also largely upon the subject in hand. There is but one kind of reading, however, that has much value in this inventive process, and that is the topical. Desultory reading has its advantages for the man of retentive and classifying memory, who must write something about many things rather than

accurately about any one thing. But he who will adequately treat a single topic must know who has written about it, and what is the sum of present knowledge concerning it. He does not want to go over beaten paths supposing they are new lines of discovery. It may do for the sake of discipline to blaze a new trail through the woods in ignorance of the old one close at hand; but he is not pleased when some one observes, "This is well enough, but you know this path was laid out years ago; and abandoned long since," he may possibly add. Therefore, if the youthful inventor is going beyond his personal knowledge at all, let him go to the end of the road and take his point of view from the position of the farthermost pioneer. He may not be able to go further, but he will have the unbroken field before him, and will appreciate the value of the next discovery, by whomsoever it may be made. To follow the road-breakers in science and literature up to the last stake, involves a labor of finding out, which in turn needs a special training and facilities for investigation. The place where the light dwells which will illumine the subject in hand is the beginning of requisite knowledge. It is not in one book alone; it is not all of any book. It is a line here, a paragraph there, a chapter somewhere else.

Yet how helpless is the young man who stands in a library before its ranks of books with their backs turned upon him, giving little token by their curt titles of what is in them! He knows that the information he needs is within reach if he only knew where to put his hand. But he might as well be in the wilderness of a strange city, studying the door-plates to find a

helping friend, not knowing of such a thing as a directory. Fortunately libraries in these days have directories in abundance. First, in the live and sympathetic librarian and his assistants who hold the clues to all knowledge, and who can connect the inquirer with any line in all the circuits of wisdom. Of them no applicant for information should ever be ashamed to ask, "Where shall I find the fact or the fancy I am in search of;" for the knowledge that can make answer is professional, as much as that of the man of any science. It is that of books, of what the thinking men of all ages have written upon the topic you have in mind.

How the bibliographer can know it all is understood by those only who are of the craft, and is appreciated only by those who sometime have needed to know in one direction what these know in five hundred. If, however, the student have a laudable ambition toward independent investigation, there are the printed directories at hand,—Poole's Index to Periodical Literature to show who has written about, or oftener around, his theme in this century. Better still, the larger encyclopedias will furnish compendious treatises, and, what is of greater value, give the literature of the subject, so that further research may be made among authors who have written voluminously upon it.

Beyond these sources of information is one which should be mentioned under the breath to youth who are looking for some short cut to knowledge, and that is the expert—the man-who-knows. But his knowledge has cost him too much to be profanely demanded for labor-saving purposes. Moreover, you will find that however willing he may be to give it away, you

must bring some sort of key to open his treasure house. Some little information or attainment of one's own serves best; just as one must have some knowledge of a foreign land before he can expect to acquire more by travel in that land. He who has such a key to professional attainment strikes a well of wisdom, the very essence and condensation of ages of inherited and accumulated information and experience. How quickly are mistaken theories corrected, cherished vagaries exposed, fond fancies dispelled! Fortunate is the student who has the entrance to the seven-pillared house. Thrice fortunate if he may stand in the light that beams from the breastplate of judgment. Even more fortunate is he if he have the desire and the will to go faithfully over all the road to eminence step by step, finding truth for himself and by himself, yet never refusing the advantages which other seekers after wisdom have gained. He is heir to them all.

None of these sources of information, however, can do away with the necessity of reflection—the first, the second, the third thing in composition. Unless in the crucible of meditation the scraps and the coin from various regions are melted, the gold cannot bear the home stamp of proprietorship. A line from this author, a page from that, a section from another is the scrap-book which shows the patch-work and the scissors. A hundred times better is it to turn all clippings and cuttings and notes into the vat and into pulp that the bulk may flow out a clean, fresh sheet, carrying with it the thinker's own water-mark and stamp as a sign of ownership through the processes of disintegration and assimilation. It can be accomplished by reflection

and meditation; but the one must be intense and the other prolonged. Nor is it a matter of so many hours to a composition, no matter how distributed. Thought will not grow in twelve consecutive hours in one day as it will grow in two hours a day for a week. Brooding over an idea day after day for an hour or two at a time is better than the forced heat of hour after hour till midnight. Time somewhat leisurely taken is an element that must enter into wholesome composition. Time to collect and to sift and to select; time to think in the best moods; time to reflect deliberately and soberly, possibly in the rectifying and adjusting influence of the open air and prosy daylight, so favorable to sensible and practical views, just as lamplight is promotive of fanciful and often of extravagant views, leading the imaginative writer to dash off wild fancies through which he will draw his pen in the cold light of the next day. Therefore, as a rule, let one work by daylight and in the best of it. Creative intelligence should associate itself with light. Absorptive intellect may do its reading by the lamp and thus compose its nerves for sleep.

When the material is "invented," that is, come into the mind, who can say whence—or discovered or combined anew or reproduced, as genius reproduces without plagiarism, Shakespeare his plays, Chaucer his poems, Macaulay his history; when this is done and well done the second part of composition is more than half accomplished. Let a person be thoroughly possessed with a thought and he will manage to impress it upon others. Now I am not saying, no matter how he does this; but it may be said that if he is not first

fully possessed by the thought no amount of words and no grace of style can make up for the deficiency. It is not worth the while to study rhetoric for the acquisition of a good style in which idle nothings are to be expressed. It has been done in certain periods in the history of literature, but they were ages which were full of vanity and nothingness. On the other hand, for those who wish to utter good, strong thoughts in the best words, there is no limit to be placed upon the estimate of rhetorical and philological studies. The order of them is in all the books, and any order is better than none. It is not my purpose to advocate any method or any single book. One may be best here, another there, still another somewhere else. There are a few principles which underlie all rules and precepts and examples toward which all continuous study tends, rather than toward minute divisions and subdivisions. So few that the self-sufficing think that they can be omitted altogether. Yet it is these few principles that widely separate the man who writes or speaks with effect from the man who does not understand why he himself is not equally effective.

If I were to take only one of these fundamental principles and leave all the rest to the text-book and the instructor, it would be the philological principle of the right word as opposed to the wrong, to the indefinite, to the ambiguous, to the synonymous; in short, the exact word as distinguished from the one that will answer the present purpose of haste and vagueness. This I believe to be the first and greatest defect of college composition. It springs from carelessness, from the hurry of delayed work, and sometimes from

sheer laziness in the matter of turning over the dictionary for a definition or a synonym. But where there is a copious vocabulary, or the determination to explore the resources of the vernacular, with a discriminating sense of the value and relation of words, the well-defined thought in the writer's mind will find clear expression of some sort to the understanding of the reader. That it is not the same sort of expression with all good writers is our good fortune. There are some good styles which would be spoiled for us if they followed the rules of composition too closely. Individuality counts for something. On the other hand, the best writers of every kind are not found wandering far from fundamental principles.

All others need to keep close to the methods of good usage and present usage and national usage. To take liberties with words and clauses and figures of speech is perilous for any who are not above the laws. It takes the authority of a nation to create a currency. It should be observed that eminent writers are content with words current in their own time, although not content with a small number and a limited supply of phrases. And this, not to overload expression with words of similar significance, but in order to have in stock the word which may be wanted to match any shade of thought, as a Greek would have matched it among the ancients, or a member of the French Academy in our own time. The value of finding this right word is not so great to the world as to the student; but that is the worth of all his education for the present. Therefore, let this personal work be encouraged for the originating power and creative habit, which is

worth more to the young writer than anything he can produce at present with all the help that a hundred books may give him. He will need these by and by, and need to learn how to use them as steps to a higher combination; but now he needs most of all to get in good working order the transforming powers which shall keep up the continuous labor of every age—the reconstruction, reproduction, and re-presentation of transmitted wealth from the past to the present, and possibly to the future, if he be so fortunate as to produce something worth preserving.

It is not expected that I say *many* things about college composition. Therefore, I have attempted to emphasise fundamental processes, leaving unmentioned later ones which belong to the arrangement and effective setting forth of material invented, discovered, and appropriated. I have chosen rather to begin with the inmost mind, working upon what it finds in its creative depths, brought to it through the eye and ear, or through the mental vision and the sensitive soul. It is an interesting experiment to see what the average student can do with his pen in the direction of both thoughts and words when shut off from all communication with books. Having done well here, he will do all the better when he comes to add to spontaneity the satisfying labor of investigation and the more careful methods of expression.

One thing, however, ought always to be kept before the student of English composition, namely, that it is to be for him the channel through which the resultant of all his education and all his culture must flow out to others. He may gain many things for himself by

the study of other departments of knowledge; they may live with him and die with him, and the world be little or no better off for the fact that he has absorbed so much by his study of the sciences and his reading of the literatures. Unless his science and his literature absorbed become assimilated and the food of an active, growing, and productive intellect, throwing off leaves and fruit after its kind, then these acquisitions are like hoarded wealth—a comfort and a pride to the owner, and to his neighbors a source, maybe, of amazement and awe, mingled with conjecture as to how great his possessions really are.

But if the world around him is to be enlightened and helped; if men and brethren are to get larger views of truth and obligation and privilege; if, indeed, onlookers are to know what a college is doing for its student, their first attention is with the listening ear, to hear what he has to say and how he will say it. The community has little time for other and more painful methods of inquiry. It prefers to hear what he speaks or to read what he writes. And when the speaking-man appears, the people are as ready to listen as they were of old in Attica, in the Roman forum, in the basilicas of Constantine, in the cathedrals of Europe, in the parliaments of the West. The printing-press, instead of diminishing the speaker's power and restricting his field and crippling his resources, multiplies them ten-thousand fold; besides adding to the list of orators those who are eloquent with the pen, having audiences of their own, though dwelling far from the multitude. For every reason, therefore, the importance of producing well-ordered thought in well-ordered speech weighs upon the stu-

dent of our time. Wide is the field before him; large are the resources at his command; multiplied are his listeners; and great is his reward.

Such is the value of composition to him. Shall I close without asking what are the compensations to those of us who must occupy much of our time with the rudimentary efforts and the unshapen products of the youthful genius? After all our precepts and principles, instilled with painful zeal, we must be conscious that the main requisite is an aptitude for composition which is not furnished by books. To give one and another the creative and the comparative powers is not the same as cultivating the memory and the logical faculty. The instructor of the productive brain knows that his task is among the most difficult that belong to mental training. If there were no satisfaction in results, there is some in recalling the illustrious company that has had for its life-work the education of youth in the art of public discourse. The roll is a long one, running far back to the morning of literature—so long and so far that only the greater names can be mentioned.

Empedocles, in the remote distance of Sicilian despotisms; Corax, the inventor of forensic composition; Gorgias the Leontine, coming to Athens to teach eloquence to the Greeks; Isocrates, composing and instructing by turns; Lysias, Isæus, Andocides, and Æschines, instructors all in the high art of verbal expression, training a race of speaking men whose highest development is Demosthenes. Such principles of composition as these artists evolved, the great Aristotle classified in his scientific method, handing them on to the Romans to adapt to their own sturdy

speech. Sulpicius Galba and Rutilius Rufus begin a long succession of rhetoricians whose highest example is reached in the great Cicero himself. Quintilian does for Roman oratory what Aristotle had done for the Greek, and after him come the preacher-rhetoricians of the early Christian centuries—Athanasius, Chrysostom, the two Basils and the two Gregories, Ambrose, and Augustine, professors and preachers.

Out of mediæval darkness arises the venerable Bede, followed by the clerics, Bernard, Damian, Boniface, and many a lesser light who taught men to speak to men, until the printing-press gave opportunity for the thinking man to write in a new style for a larger audience to read. Still it has not lessened in the least the love of mankind for speech from the heart to the heart, and when the true orator appears, as he always does when the great occasion arises, he is welcomed as gladly as at Athens of old.

Therefore the teaching of the art of arts and the interpreter of all the sciences holds its ancient preëminence. Its methods are changed to meet new conditions of communication, but its essential principles are the same that they were in the age of Pericles, of the famous Ten, of Tully the Roman, of Chrysostom, of Savonarola, of Massillon, of Chatham and Pitt and Burke and of their successors in the new republic of the West. All we need is the return of such issues as have stirred men's hearts from time to time in the past to make us feel once more the value and the privilege and the responsibility of that instruction which helps the man who has the gifts of thought and speech to use them wisely and effectively with tongue or pen.

IX.

THE DEVELOPMENT OF LITERARY TASTE IN COLLEGE STUDENTS.

By Charles F. Johnson, Professor of English Literature in Trinity College.

There has been carried on in England, as we all know, an active and heated discussion of the question, whether the study of literature as an art, or the study of philology as a science leads to the truer scholarship in a university and is the more likely to result in valuable acquisition to the students and in general advantage to the community. The subject I have taken is but slightly connected with any aspect of that controversy. The conservative and the innovator, the man of science and the man of letters, will both agree that a development of literary taste in college students is desirable. My subject leaves me at liberty to avoid the contested points and to state what seem to be the best methods to foster this development.

What is an American college? It is a very heterogeneous collection of young men, brought together, for the most part, by the desire of receiving instruction. The largest fraction comes from the high schools and academies in which the training has been regulated with reference to the college curriculum. A certain number, constituting perhaps the most valuable element, have received a very insufficient preparation, since they have been brought up at a distance from

schools and have in many instances been forced to earn their own living for a period. The American *Collegium* is, therefore, a very democratic body, and in a peculiar sense representative of our people. Again, the objects of these young men are widely different. About half of them intend to become ministers, lawyers, or doctors, a few to become teachers or journalists, a few to become business men, either in exchange or production, and perhaps four in a hundred may be able to take a graduate or university course, either in this country or abroad. There is also a small class who expect to lead a life of leisure, and practice diligently the art of killing time preparatory to the business of life. One in a hundred of these young men may hope to devote his life to scholarship, perhaps one in a thousand may become a writer. Pressing on these young men at a hundred points is the spirit of our busy, practical democracy. It is evident that any methods which tend to develop literary taste in such a body must be very general and very elementary.

These methods must also be largely indirect. The professor of English meets his classes but once or twice a week during the four years of their college life. He must instruct them in English composition, an absolutely necessary requirement. The correction of themes is his main duty, and may be performed in a mechanical way. The development of literary taste is to a very large extent dependent on the atmosphere of the *Collegium*, on what the students instinctively feel to be in the opinion of the community the ideals of desirable power in the mental world. This atmosphere, I think, depends largely upon the unwritten traditions of the

college and upon the standards held by the professors of Greek, Latin, and history, as well as upon the teaching of the professor of English. Indeed, I have sometimes felt that one or two students, enthusiastic in their admiration of literary form, even though mistaken, exercised as wholesome and as controlling an influence in fostering a taste for good literature in their college as the entire body of instructors. The methods of developing literary taste are, therefore, quite as much indirect and intangible as direct and capable of formulation. Further, this indefinable atmosphere reacts on the professor himself, either as a stimulus or a discouragement.

Again, the object sought for, "literary taste," is a delicate question of judgment. Correct judgment in artistic questions is slowly acquired. It is, too, something which cannot well be made the basis of academic honors, because standards differ among the initiated. We can test the body of knowledge acquired by a student about the facts of literary history, or about the evolution of the art of prose expression, by written examination papers. We can examine students after a course of lectures in formal criticism, as Mr. Churton Collins has well shown, but it does not follow that we can fairly test the correctness of literary taste in the same way. Of course there are underlying principles of art which can be taught, but, after all, appreciation of literature is very largely a matter of individual temperament, and it is a fundamental axiom that "tastes differ." Examiners who made culture a criterion would approach the literature papers with entirely different conceptions of excellence. I

should say that Mr. Collins's estimate of *Paradise Lost* was radically erroneous, and that a man who speaks, as he does, of that deadening book, *Johnson's Lives of the Poets*, was himself devoid of true "literary taste." Again, there are many who would not agree with Matthew Arnold's estimate of Emerson. Many persons take it for granted that a book which had great vogue at a particular period is for that reason good literature, forgetting that there have been periods when taste was very defective in the English nation, a phenomenon hardly less remarkable than the counter one, that at other periods it has been very pure. Many books have come down to us that are very valuable as records of the tone of the national mind, but have no standing as pure literature. Literary taste is a capacity for enjoyment. Pure literary taste is a capacity for enjoyment of that which common consent has adjudged to be most worthy. It can justify itself to some extent by reference to the canons of art, but after all the majority that decides the question, "What is good literature?" is a narrow one. For this reason a just literary taste is something very difficult to measure.

If we try to define it we find that it is complex. It consists of several elements or powers of judgment which co-exist in very different proportions in different individuals. First, the power of instinctive correct appreciation of the sound-sequence, both vowel and consonantal. This is, no doubt, largely a physical matter, yet related, as all physical matters are, to the spiritual. Second, the perception of the relation of a word to its meaning and of the manifold associations called up by the word. Third, the perception of the

thought-sequence, which gives a reader delight in ideas connected or contrasted by some subtle shade of likeness or distinction, and of the just modulation of a line of thought—the quality which makes a composition a unity in the artistic, or even in the logical sense. Fourth, the perception of the delicate revelations of the author's personality in the style, the quality which makes some books, in the highest sense, good company—the quality which constitutes the charm of Walton's "Compleat Angler" and of Lamb's Essays. Lastly, the perception of the embodiment of a vital and congruous human character in fiction, the power of George Eliot and Thackeray and Shakespeare, the power in the exercise of which the human spirit seems to come nearest to an act of creative energy. This, or any other analysis, of literary qualities is far from exhaustive. There are other and higher elements in a great work of literary art, and, after we have carried our analysis as far as we can, there is still something which eludes us. Very possibly it is the very quality which constitutes the life of a work of art, and perhaps one cannot do more to train literary taste than to impart a belief in this haunting and indefinable quality, but a perception of the qualities enumerated is at least the basis of literary taste, and when the estimate of these qualities by another person agrees with our own estimate of them, we are apt to say that person possesses good literary taste. And if the attention of young men is called to these qualities, with full illustrations of their presence, it is probable that these young men will receive more enjoyment from the reading of good literature than they did before.

Before describing what seem to be the methods by which an instructor can do something to increase intelligent appreciation of the literary art in students, I wish, first, to state what is one of the requirements of personal education, that is, of education when the instructor exercises some personal influence over his pupils, and, secondly, what in my opinion are the main objects to be sought in all education. In the first place, I think that the secret of education lies in small classes, and that this is especially the case in these branches where some effort is made to train the judgment. In teaching one of the exact sciences, an instructor may meet as many as forty pupils, but a literature class should not consist of more than twelve—preferably, of not more than six. There must be in such a class a constant adjustment of mind on the part of the teacher to meet the mental stand-points of his pupils. In a large class, this is impossible: the class must be regarded as a unit, and the instruction assumes of necessity a perfunctory character. Of course one can lecture to a large class and let the members take what they can assimilate and reject the rest, but such lecturing is not educating, it is simply affording students an opportunity to educate themselves, which in some cases is all that is needed. In this fact of meeting small classes lies the power of the English universities. There, the tutor sits down in his room with a few students and works on them as individuals. They are at the same time subjected to the influence of a scholastic atmosphere. Of course the value of the system is much lessened when the object sought is "cram" for a special artificial examination, as is the

case at Oxford and Cambridge, but the efficiency of these universities—and with all their shortcomings they certainly have been efficient in imparting culture—depends on the fact that instruction is given to small classes in an atmosphere heavy with scholastic and literary traditions.

Unfortunately we cannot always restrict our pupils to the number of the muses. I will pass on to state what in a broad way seems to me to be the object of education. Substantially, it is three-fold: first, increase of knowledge—the storing up of matter to work on, the acquisition of knowledge of facts, principles, and rules, which, even if forgotten, are never entirely obliterated from the mind and can be readily re-acquired. In this would be included knowledge of where the authorities and stores of material are to be found. Second, increase of power, ability to work, acquaintance with tools—traces in the brain of many trains of reasoning once followed out, and therefore ready pathways for new lines of thought. Third, increase of capacity for happiness. This last I am not willing to reckon the least important object of education. Of course the burden of doing daily work lies on every man if he would vindicate his right to live. Power to work in some one line is absolutely necessary to effective energy and that education which disciplines this power is of course of paramount importance. I will admit, too, that a large part of our happiness depends on work, on energizing and doing as well as we can what we have been trained to do, in the assurance we feel that we are members of the community and are paying our way. But I assert that, setting aside that

part of our happiness which depends on sympathising with others—a happiness of the heart, and largely confined for its source to the family—I assert, setting this aside, that there is nothing by which a man's capacity for happiness can be more readily and indefinitely increased than by cultivating his taste for art. And of all arts, the taste for the literary art is the most general, and, on the whole, the taste which best consists with practical, every-day humanity. In exceptional cases the love for music or painting is a controlling passion, but an enjoyment of books in one degree or another is substantially universal in America.

But, perhaps, I am wasting time in dwelling on the importance of cultivating a literary taste in young men. Before this Institute that proposition may be taken for granted. Let us take up something in which we shall be likely to disagree: practical methods of cultivating literary taste in an average body of college students.

The first thing to do in discussing a question of this sort is to find fault with the text-books, even at the risk of hearing quoted against one the proverb, "The poor workman finds fault with his tools." But a workman might find fault if he was ordered to produce a smooth surface on a board and given only a hammer and nails, which, however well adapted to attach things together, are not exactly the tools necessary to finish a piano-lid. Still more might he rightly complain if given no tools at all and required to use his bare hand, an excellent instrument to grasp tools, but not to work raw material, unless it be the most plastic clay with all the grit and chert carefully removed. But this is substantially the situation of the teacher who would try to cul-

tivate literary taste in young men. There is no text-book. Admirable compendiums of the history of literature we have, with dates of scrupulous exactness and lists of works after lists of names. In some instances there is some division into periods, and a very slight attempt to connect literary expression with the development of the ruling ideas of civilization, but this is a treatment which implies considerable maturity of mind on the part of the student. It is a university method, not a college method; it is putting the graduate work into the Arts Course. Of course some philosophical treatment may come into the teaching of senior year, but what I have now in mind is the initial process, a process which will enable the boy to see the distinction between a story as told by Louis Stevenson and a story as told by Rider Haggard. As a rule, our text-books treat a book as a specimen.

If a book attained a certain vogue in its day, it is ranked as a classic, whether that vogue was an adaptation to the whims of the hour, as in Lyly's "Euphues," or to the eternal laws of art, as in the culmination of Mallory's "Morte d'Arthur." Perception of literary values can be cultivated at an earlier age than can broader generalizations of the philosophy of history or of the evolution of thought, and, therefore, I find fault with all the manuals of the History of Literature I have seen. I have little respect for rows of facts. Rows of figures I regard with the veneration of ignorance. They form a series, I suppose, and are connected by some recondite and mysterious law. Rows of literary facts do not disclose their connection or binding law except to the man who investigates

them in their original sources. Taine's book contains too many generalizations, and is English literature as examined from the standpoint of an intelligent Frenchman. Shaw and Craik are antiquated in phraseology. The world has learned much since they wrote. It has gained both fact and generalizations. Morley's volumes are too bulky. What is needed is a book written by some one who has spent his life in preparation, who has a consciousness of collective literature as the expression of the mind of the past, and a vivid feeling of the great principle of evolution which has controlled it, as gravitation controls the course of a river which is always the same river, though it may vary in character as it passes from one geological formation to another, or may bear more heavily against its western bank, as its particles take up the impulse from the increased swiftness of the rotation of the earth's surface in southern latitudes. We want a history of literature that shall send the student to the originals in the right spirit—a sketch of the great movement with ample illustrative quotations and some genial, broad, and inspiring criticism.

Nevertheless, this dearth of text-books has one good effect. It forces the instructor back to the originals. The Shakespeare course naturally suggests itself first. In this, I think the instructor should read one or two plays, making such comments as suggest themselves after reading Furness's edition. He may take ten minutes at the end of the hour for rapid questions, not for the purpose of marking, but to ascertain how the students are taking up his ideas and what their needs are; or he may hold a written examination once in

five or six readings, basing his questions on Rolfe's edition of the play. If he likes, he may require written papers from time to time on subjects proposed. Any or all of these methods he may adopt at his pleasure, but what he must insist on all the while is, that the play is poetry—dramatic poetry. That must be always present in his mind. The guesses at the various *cruces* he may as well pass over. To take students through the various conjectures as to the meaning of "runaways' eyes" is calculated to give them a low opinion of human nature. Suggest "Here is a misprint. No one can correct that but the author, because the original words were his—and he is dead." Tennyson's "In Memoriam" is but little inferior to one of Shakespeare's plays as a medium of arousing a love of pure literature. And Browning's "The Ring and the Book" would be quite as valuable were it not so long and so difficult. In any case, as soon as the qualities which are really artistic qualities are pointed out, and the pupils come to appreciate them, they will read with new intelligence.

The problem is always how to do justice to the bright, capable, appreciative scholars, and not overlook the dull and heedless. In American education the principle seems to be to lug the dull ones along as well as possible, adapting the lesson to them and letting the bright ones forage for themselves. Should it be rather to encourage and force the interested and the interesting ones, and pay no attention to the others? I have sometimes thought so, yet how often have I been humiliated by finding that the boy I thought dull was after all the one who came in the nearest relation to

poetic thought, perhaps the one who possessed the true literary touch for which I have so often sighed in vain.

This, then, is one method, analogous to what is done in a cultured family, where some one member reads and calls attention to points that appear to him beautiful—an application of the seminary to the implanting of culture. Another method is by the lecture. In college, I think the lecture should, if possible, be supplemented by a text-book, because, as I said before, it is absolutely necessary to have some regard to the indifferent and to the dull; therefore, we must set some tasks. The ideal method would be to lecture to the ideal pupils, the wide-awake, the open-minded, and diligent, who will take notes attentively and read outside everything to which their attention is called. In a university where a degree is of great value in opening the doors to future distinction, as in Germany, where "2 A" may lead to a position in the civil service or in the church, of ten times the value that will follow "2 B," it may be sufficient for the teacher merely to set the table, but in our country he must at least invite the guests to eat. In college it is necessary to insist on some work definitely laid out. The lecturer must insist on having full notes taken, and must mark and edit the notes. This is a very laborious method, for to edit notes and comment on and explain points misapprehended takes nearly as much time for every pupil as the delivery of the original lecture occupied. If accompanied by conversational explanations, it is the most effective method, for it is equivalent to making yourself not only lecturer but private tutor to each student.

Another method is to lecture on a certain definite subject, say a single man, Shelley, Keats, or Rossetti, for instance, then assigning easily accessible books to be read, require each pupil to lecture to the class for a short time, fifteen minutes perhaps, from a syllabus or heading. This has the advantage of training the student in oral discussion. It is, perhaps, the very best method for estimating the ability of a student, for his manner of expressing himself is an index to the working of his mind. The syllabus is to be examined, of course, and should contain nothing but headings and a few dates.

These methods involve a great expenditure of time and nervous force on the part of the teacher. They demand hard work. They are applicable to small classes only. The first,—readings from an author and required papers, or examination on an annotated edition—is the simplest and much the easiest, perhaps on the whole, the most practicable, unless the instructor is so fortunate as to have a class of not more than five, and they, bright-minded, receptive men. After all, the main point is not so much a question of methods as of personal enthusiasm, and of the presence with the teacher of the consciousness that his subject is not altogether history, philosophy, nor biography, nor a succession of facts, but the development of an art-form.

But, even granting that to the teacher literature is a national art-form, a record of thought, emotion, and aspiration, there are still two points of view that his mind may assume. All arts consist of form and substance, body and spirit, emotion or thought sought to be expressed, and style or manner of expression, the "airy nothing"

and the "habitation" given it by the artist. Either of these sides may be emphasized at the expense of the other. On the one hand, the teacher may become interested in forms, metres, styles, workmanship generally, and may run into dilletanteism; on the other, he may run into a vague sentimentalism, which, as in some forms of the adoration of Shelley, Browning, or Shakespeare, deals in a misty rhetoric that interprets the "airy nothings" of the poet into gaseous somethings of its own. The most cold-blooded, mechanical analysis is better than this form of "æsthetic criticism," as it is called. But we are safe in taking it for granted "that the court knows some law," that the teacher has some common sense which will remind him that so complex a thing as literature must not be considered as consisting of only one element.

Some study by young men of art-forms—the sonnet, the ballad, the ode, the *ballade*, the *rondeau*, etc.,—is very likely to "develop their literary taste." The pleasure we take in a work of art is doubtless much enhanced if we know something of the rules and mechanical processes of its construction. Our admiration of the beautiful is at least two fold—we sympathize with the artist as a workman, and we are vaguely conscious of some indefinable attraction, perhaps a suggestion of perfection or of the universal harmony. The first, the pleasure we take in comprehending a work of human skill—the elation which comes from the knowledge that trained powers have been rapidly and skilfully energizing, is much greater if we understand something of what has been overcome. Thus, one who knows something of the difficulties of paint-

ing, of what is necessary to correct drawing, to a harmonious color-scheme, to intelligent composition, receives more delight from a picture than he who is vaguely conscious that there is before him something great. A man who understands the construction of a sonnet and knows something of its various forms, will read a sonnet with more pleasure than the man who reads it without perceiving that it is organically divided into two parts and that it is written on a definite and rigorous rhyme-scheme. The same is true of the French forms of verse—in fact of all verse, even of the heroic couplet. The study of the various styles of blank verse and of the very intricate harmonic laws that render some blank verse so powerful, gives a new capacity for pleasure. But, as I said before, there is danger of making the mechanism of verse the prime object of criticism, because an examination of the mechanism has an appearance of being definite and systematic. It seems to agree with the spirit of the age, to admire the formal part of art. True admiration of art has higher moods than gratification with a product of trained skill or of an accurate ear and patient industry energizing within the narrow circle of metric law. Poetry presents a succession of pictures to the mind as well as a structure of audible symmetry to the ear. These pictures constitute a tragedy or a comedy, that is, a little piece of life, which is a succession of collisions between the wilful moods of men and the everlasting laws of the universe. How the great poet knows these laws is one of the mysteries. He has that instinctive apprehension of them which we call inspiration. The world acts on him, and he reacts on the world in the spirit

of the universal which we call God, which some of us still believe to be in the broad sense of the term, a person—an organizing and creative will. The teacher who does not believe that art has this high mission, that the artist at his highest is an unconscious interpreter, though often thwarted by the limitations of humanity, must, it seems to me, be as one-sided as he who thinks that poetry is delicate mechanics and nothing more. In poetry, as in all embodiments of the beautiful, there are two elements of our compound nature appealed to, and a just literary taste must rest in neither exclusively. The teacher must avoid the cold, barren, mechanical view on the one hand, and vague, mystical unrealities on the other.

I feel, Mr. President, that I have not done this subject justice, but it is very difficult to deduce from experience any general principles on the subject of education. It is the most delicate art practised by man. It cannot be thoroughly codified, because the material on which it works is made up of individuals, and the distinguishing mark of an individual is that it differs from all other individuals. An education which lessens individuality, which grinds all down to a pale uniformity, is radically injurious. Education must develop each individuality, in accordance with its own nature, towards a certain type. We cannot codify education rigidly, as we can some disciplinary system, for education is a "drawing out" of the personality, while law is a body of rules for restraining the free will of the personality. The bodies of men vary so much that medicine is largely empirical, but their minds vary so much more, that we must regard each new

pupil as a new combination of tendencies, capacities, and deficiencies. How obscure and delicate and difficult is the problem of acting on these hidden personalities, we have all felt in moments of profound discouragement. And yet, teaching is to my mind the most fascinating of human employments. There is an unceasing variety in it. It is like shouting out sailing directions to vessels in a fog. There is the excitement of receiving an answering hail from a quarter whence one least expects it, and perhaps in an unknown tongue. There is in the world no phenomenon so interesting and perplexing as the young male of *homo sapiens*. The hunt for his elusive intellect is full of surprises and excitement and must be pursued with great caution, because we wish to take it alive, and modern arms of precision are very apt to maim, if not to kill it. Education is the most refined and difficult of the fine arts, and perfection can never be attained in it. But if perfection cannot be attained, we can, nevertheless, pursue it with unbated enthusiasm, for we know that the unattainable is not the illusory.

X.

COUNTRY SCHOOLS.

By Hon. Henry Sabin, Recently State Superintendent of Schools for Iowa.

The mills of the gods grind slow but they grind the same old grist unceasingly. That which hath been shall again be, and that which is to be in the future hath been in the past. There is not now, and there never will be, anything new under the sun. The country school still stands by the wayside, a ragged beggar sunning, as it has for fifty years; and fifty years hence "about its sides the blackberry vines" as now will "still be running."

What is there then to be said about the country school? The unpainted, dilapidated building, the door without locks, the windows without blinds, the hideous surroundings; the room unwashed and unswept, dreary and comfortless. All this is but an old story—as true as it is pitiful, and as pitiful as it is true.

Combine with this the untrained teacher, often an immature girl or boy, but little in advance of the pupils in knowledge, and with neither judgment nor skill in imparting that little; pupils irregular in attendance, and parents indifferent to the present—a generation of Ichabods joined to their idols, and consequently op-

posed to the introduction of new and unknown gods, and you have the vivid picture of the country school as it has been portrayed at educational associations from time immemorial. And to what purpose? We gain nothing by this course.

If we can, however, rescue the country school from its present conditions, these environments which are but accidental, will speedily take on a different aspect. The environments of the school are but the outgrowth of the school itself. They are but the symptoms which reveal the existence of the disease.

In the preparation of this paper two points have been kept in view. First, that the subject under discussion is the country school, irrespective of its surroundings; and second, that the country school as it ought to be under ideal conditions is one thing, and the country school as it can be under existing limitations is entirely a different thing.

This latter phase of the question is all that is of immediate importance. There are limitations beyond which we cannot step, there are hindrances which cannot be removed. We do not quite like the style of the garment, but we are compelled to cut it according to our cloth.

The country school has been injured by the prominence given to the claims of purely intellectual work. The race of fools is not by any means as large as we sometimes think it is. There is a vein of common sense running through human nature, homely, uncouth, awkward, and yet a keen discerner of the fitness of things. Ignorant of reason, it goes straight to the mark, and enables a man devoid of understanding to

demolish the fine-spun theory of the man of books. He knows that two and two make four, although he cannot explain the process.

The country school stands in the midst of a farming community to whom at certain seasons of the year the labor of the children is indispensable. The people of the neighborhood know this, and they cannot see wherein it is unnatural or unreasonable.

It is not a revival of interest in the country school which is needed, as much as it is a revival of confidence. The people are to be reminded that the school is an integral part of the community, and not a separate affair, which the law compels them to support, and which takes their children away from them at a time when their assistance is most valuable as an aid in lessening the labors of the household.

I grant, of course, that the great business of child life is education. But when is a child educated? Is it when he can translate freely Latin and Greek text at sight; when he can speak the modern languages as fluently as a native; when he is familiar with mathematics, at home in literature, and an adept in the sciences? If that is all he possesses, his education is as one-sided as that of the veriest rustic on the farm.

That man alone is educated who has come into such possession of his moral, intellectual, and physical resources, that he can take his place among his fellows, earn an honest living, and contribute his share toward sustaining those institutions, which constitute the frame work of American society. If he cannot do this, he must rank among the uneducated. Book knowledge is but a fractional part of education.

When the boy reaches such a stage, no matter what his age, that his father says of him, "I cannot spare him. He is worth more to me than any man that I can hire, because of his better judgment, his common sense, his interest in the work of the farm;" he is more thoroughly educated for the practical business of life, than one half the graduates of the highest of our high schools. When the young man steps into active life the first question which confronts him is, "What can you do?" If he fails to answer it the world has no use for him.

It is not the building up of the physical frame, it is not the development of brain power, it is not the strengthening of the will, nor the cultivation of the moral senses at which we aim, but rather the combination of all these in that manly sense of independence which comes to the boy when he realizes, for the first time, that he is an essential part of the family, that he is called upon to make some sacrifice for the good of others, and that he is responsible for the discharge of duties which affect the welfare of those with whom he lives.

The product of such an education is the pride of self-respect, and the country school, in connection with farm life, affords us the best possible means of imparting it to the child.

If he who makes two blades of grass grow where but one grew before is counted a benefactor of his race, then he who has been taught to hoe a hill of potatoes so as to double its increase, is, in a certain respect, educated so far as he becomes a producing factor in the economy of the farm. To some extent

we have arrayed the people against the country school in holding it up as crime against childhood that parents keep their children at home to work on the farm, whereas we ought rather to turn this tendency into the more useful purpose of aiding us in securing such an education of the entire child as will make him a respectable, useful citizen.

When the people are convinced that the farm and the school are aiming at a common end, and are not antagonistic in the adoption of means to attain that end, the regeneration of the country school will be near at hand. The country school will never resume its old place in the hearts of the people, until we recognize the conditions which surrround it, and bring its instruction and its influence into touch with the home-spun affairs of every day life.

It is not the grammar school as much as it is the country school which needs to be rescued from the dead routine of dull formality, and to be brought back into closer relations with the people for whose benefit it was established and maintained. In any attempt to restore the old-time dignity of farm labor, and to restrain our young people from the present headlong rush into the cities, the country school has an important part to perform, and it can be done only by establishing the true relations between the home and the school; between the necessities of physical and the necessities of intellectual education.

Consequently under the right stimulus, which may be derived from the condition requiring child labor during a part of the year, the country school, with its freedom from class restraint, its opportunities for indi-

vidual instruction, can be made to do as much for the child in six months as the city school can in nine, considering the impediments which necessity, custom, and stupidity have conspired to throw in the pupils' way.

The point to all this is that the country school affords us the best possible opportunity of testing the value of work as an educational factor, and yet the very thing which we deprecate as wanting in the city system we consider as an evil to be abated in the schools of the rural districts.

In arranging the terms of the school year in the country, reference should be had constantly to the demands of farm life. If we may not return to the old-fashioned winter school, which generally opened the first Monday after Thanksgiving, and which all the larger boys and girls felt themselves compelled to attend, we may at least so arrange the terms that the largest number of weeks of consecutive school may occur when it is possible for the largest number of pupils to attend.

We have endeavored thus far to establish the point that the decay of the country school is due in some degree to a want on our part of that practical sagacity which ought to lead us to recognize existing conditions, and when we cannot change them, to use them as means for accomplishing a certain good.

This failure is more marked in the country than in the city, because in the city there is a great diversity of business, while in the country one occupation absorbs the attention of almost the entire community; and yet even in the city we do not always observe the right tendency of things. The absence of John and Mary

from school calls down the anathema of the teacher upon their heads, not because they are losing valuable opportunities which can never be made up to them, but because they will fall behind at examination, or by their absence lower the per cent. of attendance in the room. It seldom occurs to the teacher that John driving his father's delivery wagon, or Mary helping her mother about the house, is in the line of being educated in a most practical and wholesome way.

As there is a distinction in many phases between city life and country life, there is, and must be, a distinction between city schools and country schools.

The entire similarity between these systems need not be destroyed, but the dissimilarity must be preserved and encouraged, if need be, because it is founded upon certain organic peculiarities existing in the lives of the people for whose benefit the schools are established, and by whose taxes they are supported.

There are some elements of weakness in the country school, and some sources of strength. The study is how to reduce the one to the minimum, and how to render the other more available. In most states the country school is simply a mass of boys and girls of all ages and all attainments under the instruction of one teacher. Very often the diversity of text-books is as great as the number of pupils, and the evil is increased by the inability of a weak teacher to do anything without the book in hand. Now the thing most needed is to organize this disorganized gathering of children; to bring order out of disorder; to have beginnings as well as endings; to awaken the courage and hope

which comes when the child and the parents have some tangible proof of daily or monthly progress.

We do not urge the grading of country schools. In fact we believe that the worst thing which could happen to them would be to introduce the cast-iron grade, the dead line of uniformity which is to a certain degree esteemed necessary in the city system. The presence of different grades in one room; the freedom from dry routine; the fewer number of pupils which affords the teacher the power to bring his individuality into play, give an immense advantage to the teacher of the country school.

Construction is a much slower process than imitation, and not so often called into play, but it is to the teacher what exercise is to the arm of the blacksmith. It is in the smaller country schools that the opportunity is offered the teacher to originate. In fact it sometimes occurs that the bright teacher is forced to originate, because, through the isolation of the school, it is not possible for her to imitate.

Isolation is not a source of weakness. The custom of visiting schools is right, but only the experienced teacher ought to do much of it. If I wanted to spoil a bright young girl with the teaching instinct strong but undeveloped, I would give her a note book, and set her to visiting the schools of the city. If she survived the test I should have great hopes of making a teacher of her.

But notwithstanding the isolation of the country school, and though it may not be desirable to grade it, yet it may be so classified as to greatly promote the progress of the pupils. Gradation is a hindrance;

classification is a help. Gradation compels the bright pupils to wait for the dull ones, or the dull to unduly quicken their steps that they may keep pace with those of greater ability; classification allows each pupil to fall into his own place in each and every study, and to advance in each as rapidly as his ability will allow. The boy with a natural aptness for figures may find his place in the highest class of arithmetic, and a lower one in reading, and with yet another in some other branch.

There is a careful record kept of his attainments, and when he leaves school he may take with him a certified statement from his teacher of his rank in each branch. Upon his return after a summer's work the register shows just where he belongs in his studies, and there is no more time lost in placing him than there is in a well regulated graded school. Such a system has its promotions, its examinations, its reports, its cards to parents, its records. There is something of the machine about it, but with the greatest possible mobility and the least possible friction among its parts.

The course of study for the country school should be established and authorized by some competent authority, with enough uniformity to give it some degree of stability throughout the state, but with so much elasticity as to secure its adaptability to the wants of different sections.

The new Ohio law authorizes this classification of country schools, and provides for the payment by the township of the tuition of pupils from the country whenever they are fitted to enter the city schools. It also lengthens the time of office of director to three

years, and provides that only one third shall go out each year, and places the election of teacher in the hands of the township board.

In Iowa the last legislature so changed the law that hereafter the sub-director is to be elected for three years, the same as in Ohio. We have only to take one more step and place the election of teachers in the control of the entire board to have most of the benefits of the township system.

Three years ago the department of public instruction for Iowa issued a hand book containing a carefully prepared course of study for country schools. So universal was the demand for it, and so heartily was it welcomed that without any interference of the law, it was at once adopted, and is to-day in use in a large majority of the counties of the state.

As a consequence the tendency now is strongly in favor of classifying our country schools. We have many counties in which the country schools are well organized—the pupils are examined upon questions sent out by the county superintendent, diplomas and certificates are awarded, and the pupils are received, upon their presentation, into the graded schools without examination. And what is most striking, in those counties in which the classification is most successful there has come a corresponding improvement in the school buildings and surroundings.

A great deal is said about the necessity of close supervision in the country schools. There is such a thing as a supervision which is too close, a supervision which exalts the supervisor to the chief place in the school. What we need in the country schools is not

close supervision as much as it is intelligent supervision.

I would rather have one man in a number of towns, or in a county even,—and I know whereof I speak—intelligent, enthusiastic, guiding, and inspiring his teachers through institutes, associations, round tables; inspecting their work from time to time with kindly interest; cheering and encouraging them, than to have a dozen men in the same territory, haunting the school room at unexpected moments, patrolling the school districts as the policeman patrols his beat, telling the teacher how and when and where and why and what to teach until she loses her own identity, and is ready to exclaim with the old woman in the story, "Am I am I, or am I not am I? If I am not am I, then who in the world am I?" The best thing left about the country school, and its greatest hope for the future, is its freedom from the tyranny of close supervision.

Something should be said concerning the course of study in country schools. There is among the people a growing demand for a change in all the schools, looking toward a more complete education of the child taken as a unit. The demand is reasonable and must be met in the near future.

But the changes proposed for the city schools are not applicable to the country. We do not desire the introduction of algebra and geometry and Latin, as President Eliot proposes, in the little school house at the cross roads. On the contrary, it is questionable whether the proposed shortening and enriching will not in the end lengthen the course and make it more sterile than it is to-day.

The course of study prepared for the country school should embrace those subjects of which the child has practical illustrations in his daily work. A great deal of astonishment has been expressed occasionally at discovering the ignorance of little children in the city concerning country life. We should be equally astonished at the ignorance of country pupils concerning the familiar sights of the city. The contents of children's minds are derived entirely from their daily associations, and they form the best material with which to build up their growth.

It is not the shortening and enriching the course for these schools which is needed; it is rather certain changes and emendations in order to bring the instruction upon such a plane that its value may no longer be disputed.

We can throw out one third, possibly one half, of the arithmetic and introduce into that which is left a large share of practical work embracing principles and examples which commend themselves to the entire community as useful. When the father discovers that his boy can measure a pile of wood, or estimate the value of a fat steer, or calculate the worth of corn in a certain bin quicker than he can, his respect for the school is at once raised. Knowledge becomes of worth to the common people only as they see the possessor benefited by it.

If you object that this is a low estimate, nevertheless it is a true one, and we may as well understand it and make it the basis of action. The workshop and the farm are just beginning to understand their power, and whenever under shrewd leadership they combine, the school will not escape the deluge of reform.

An old farmer, an emigrant from northern New Hampshire and a member of our last legislature, told me that one day last fall he had four boys husking corn for him. In the evening, after supper, he asked them to tell him how much he would probably get for six fat cattle which he had just shipped, giving them the necessary particulars. After an hour's hard work with slate and pencil not one of them could satisfy him with the result. Now nothing can convince that man that modern schools are not failures; and that the money taken from him to support them is not actual robbery.

Such a man is an old fogy, and he is behind the times; he has not right ideas of education, but it is difficult to contend with an old fogy when his argument is based upon facts. Our theory of education is all right, but let us have a development which develops something tangible. The farmer in his field, the workman in his shop, or the business man in his office, can give us valuable lessons in the science of applied pedagogics.

We can throw out one half of the geography, and teach the remainder in much less time than we now devote to it. One small book containing the geography of our own country first, and then that of those with which we have commercial relations in the order of their importance, is all we need of geography. The science of illustrative geography would fill its proper sphere in the country school.

A series of readers, not to exceed three in number, would answer all purposes. I do not mean the readers as now arranged, senseless compilations, illustrated scrap books, but three books bearing some relation to

each other in progressive grading, entirely independent, the second and third being connected chapters of scientific or historical works adapted to children's capacity. Dispense with some of the oral reading in order that we may induce the habit of intelligent silent reading, and thus cultivate in the child the power of attention and concentration of thought, strengthen his memory, increase his expression, and make him a power, first in the family, then in society.

The course may be still further shortened by throwing out a large share of that abomination of desolation popularly termed language lessons.

The country school needs one book called, as it also should be in fact, a grammar of the English language. It should be stripped of all useless verbiage, a plain, simple, concise statement of the few principles necessary to enable the learner to write and speak in accordance with established usage. It should be a spade and should be called a spade.

With these eliminations there will come an opportunity for enrichment of the course. In connection with arithmetic the course in the country school should contain sufficient elementary geometry to illustrate the simple principles of mensuration. It should not be deferred until arithmetic is finished, nor need it wait till the pupil is ready for algebra.

The time saved from geography may well be given to civil government and United States history. There would also be found an opportunity to do more in inducing habits of reading, and to introduce more nature studies. These last should be largely agricultural in their kind and must of course differ in different states,

and in different sections of the same state. A course would be arranged embracing a few leading principles of chemistry, geology, and kindred sciences. A knowledge of trees, fruits, growth of plants, grasses, flowers, the nature of soils, the care of animals, the use of fertilizers, should be among the subjects taught. The microscope should be as necessary in the country schools as the dictionary. The country school library should be composed of books having direct reference to these subjects.

It will be said probably that such an attempt at fertilization will result in overloading a course already too heavy. We reply that the course of study in our schools is overloaded in quality of material rather than in quantity; that we propose to throw out the dead in order to make room for the quick; that this engrafting of new material will add fresh life and growth to the whole system. The country school is suffering from inanition. The remedy is a more nourishing and strengthening diet.

The plan which has been brought forward in discussing the rural school problem of compelling the larger or more wealthy districts to share the burden with the smaller, and of taxing the cities to help the country, has this in its favor, that it contains in itself an element of justice. But improving the building does not of necessity improve the school, any more than improving the church improves the preaching. Increasing the monthly stipend of the teacher does not improve the instruction given by him, any more than it increases his physical strength.

I cannot close this paper well without reference to

the fact that teachers for our country schools need special preparation for their work. It is not possible for them to have access to the costly apparatus of the city school, but the wondrous store-house of nature is open to them, and her exhaustless treasures are at their disposal, if only they have been instructed how to use them. The four years course of the State Normal, threading all the intricacies of psychology and pedagogy, of Latin and the higher mathematics, fails to meet the wants of those who are to instruct in the rural districts. We need in every state, either a shorter course in existing normal schools, or, what would be far better, special normals for the direct purpose of training teachers for this work.

Such a course should not exceed two years in length. A longer one would deter many from entering, whom we are most anxious to reach. On the academic side it should deal largely with the elementary branches having reference to a line of instruction which would appeal to the good sense of the people as practical. Professional instruction should be closely interwoven with academic, illustrating what and how to teach, with much practice and little theory. Such a course would not make professional teachers, I grant. But why spend four years making professional teachers of a class whose teaching life hardly reaches three? Let us have better teachers to-day, and professional teachers to-morrow, if we can get them.

When these schools are once established, then let the law, after a reasonable time, fix upon the completion of this short course as a minimum requirement for teachers in any public school in the state.

The country schools have been neglected in the interest of higher education, and the country school teacher has been compelled to go to her work without adequate preparation, in order that the schools in our cities and towns may have the benefit of trained teachers.

To sum this matter up, we find that the country school is confronted with these conditions: 1st, it is viewed with distrust by many as antagonistic to the material wants of the people—it is not in harmony with its surroundings; 2d, it is at present without any system of organization or classification to render its instruction progressive or effective; 3d, its course of study is overloaded with non-productive features, and is exceedingly meagre in those which commend themselves to the limitations of a rural population; 4th, the country teachers demand preparation for a special work, and there is no adequate means provided for imparting it. In proportion as we approach the removal of these conditions, we shall solve the problem of the country school.

DISCUSSION.

The discussion of Mr. Sabin's paper was opened by GEORGE H. MARTIN, superintendent of the Boston public schools. He said,—

The improvement of schools is a slow process under the most favorable conditions. In the country schools some conditions are peculiarly unfavorable. Prominent among these are the smallness of the schools, the irregularity of attendance, the inexperience and insta-

bility of the teaching force, and the dearth of suitable means of instruction. Each of the conditions is at once a cause and an effect of all the others. The smallness of the schools is due, primarily, to the set of population toward the manufacturing and commercial centres. Because the schools are small, they offer no attractions and furnish no incentive to the better class of pupils or teachers, hence the irregularity of pupils and frequent change of teachers.

On the other hand, these very features tend to keep away population, and to prevent any growth. Again: The school authorities, if believing in the use of illustrative helps, see little inducement to provide them for pupils who are indifferent, and teachers who lack the disposition or power to use them wisely. So the evils are cumulative and self-perpetuating. These hindrances stand in the way of good work along the traditional lines. The three R's suffer. Whatever halo may surround the image of the ungraded school as it exists in the mind of modern ardent reformers, in a closer observation of such schools as exist to-day, one would see "the vision splendid die away and fade into the light of common day."

These schools offer no superior advantages to the bright pupils, and they blunt the edge of dullness to the verge of stupidity. But, more to be regretted than this, is the fact that for the pupils in these schools there is no possibility of sharing in the larger and richer intellectual life upon which the children in the better graded schools are entering. Music and drawing are rarely taught. There is neither inclination nor means for the earlier and more fruitful work in history

and literature, and though the pupils are in the presence of nature, its objects and processes have little conscious influence in directing their thought or molding their character.

Nor has any system of physical training been devised which is suited to the peculiarities of these schools. Even the larger of these ungraded schools do not furnish ideal conditions for the best work. In most of them there are many classes, and so a large number of recitations, with a short time for each. Hence there is little opportunity for teaching. Hence, further, a prevailing habit of hearing recitations from the text-book. Hence the formation of mechanical habits by the pupils, little stimulus to thought, prevailing dullness, the little ones idle or noisy or stupid.

The outcome of it all is that the slower children, especially the boys, early acquire a dislike of school and books, and are only too glad to escape at the earliest moment the law allows, or a lax enforcement of the law suffers.

To reduce these evils to a minimum, so far as practicable, the smallest schools should be united. This would make it possible to secure better teachers, who are repelled by the limited opportunities for growth now by the small pay, the social isolation, the parental meddling.

Beyond this, much good would be accomplished by closer and more intelligent supervision. The Massachusetts plan of district supervision is a long step in the right direction. It is far from being an ideal plan, and in practice is developing some weaknesses, but is doing more for the country schools than anything else

has done. By means of it public sentiment is awakened and directed; parental indifference and criminal neglect removed or punished; the organization of the schools is made more simple and effective; the teachers are encouraged by sympathetic interest and helped by judicious counsel. The supervision is not, primarily, an end, but a means. The only hope of a country school or a city school is a good teacher, with a fair chance. Supervision demonstrates its reason for being only so far as it secures these.

XI.

THE RELATIVE EDUCATIONAL VALUE OF EXTENSION AND INTENSION.

By Charles Henry Douglas, Headmaster of the High School, Keene, N. H.

It is the privilege of each generation to think itself superior to its predecessors. None but the confirmed pessimist doubts that there is a substantial and continuous increment discoverable in the progress of the race. But when the attempt is made to determine the exact nature and amount of this increment, two facts become strikingly prominent: First, that men have for a long time been in possession of the fundamental principles underlying most forms of human activity; and second, that what at first seemed to be our original contribution to the subject, is largely the application of these principles to the problems that have confronted us. Each former generation has at its need made a similar adaptation. To do so is simply to conform to the universal law of progress. "The alphabet of the world's great ideas is small."

The venerable age of many a truth escapes notice because it goes about under a new name—one that appeals to the present need and awakens associations that are unresponsive to the old phrases. To illus-

trate: We are now declaring that the chief end of education is the attainment of power. Very true; but is this a new end? Or when stated thus is it a very definite goal?

The aim of the Greek education was the attainment of power—power to discover and interpret, to self and to men, the true and beautiful in nature, art, life. The supreme object was power to attain perfect symmetry.

The aim of the Roman was power—power to move and mould men, and to resist the forces of disintegration. No education with a weaker ideal could fit a race to produce monuments so enduring and such a body of law.

Scholasticism, with all its lucubrations, aimed at power—power to prove and to set forth the eternal truth.

The list might have begun with Persia and China, with the same result. No nation has aimed at less than power. Few have sought by education the same power.

Though the new education has not discovered a new ideal, it has broadened the scope of an old one. It has in turn given emphasis to the subjective and to the objective elements—to the power to be or to become, and to the power to do. The next step is to give the whole emphasis to an undivided ideal—to declare the interdependence that exists between being something and doing something—to perceive that the best part of what a man produces is effected by virtue of what he is, and that the measure of growth within reach of a life is largely conditioned by what that life does. The complex and ever changing conditions of

modern life demand that education develop and cherish aptitude for growth no less than power to perform.

There are two groups of opposing tendencies manifest in recent educational thought that are worthy of notice. (1.) To the belief that life is made up chiefly of emotions, thoughts, and purposes, and that education means the development of self-activity, of ideals, and of the serene power to possess the citadel of one's soul in peace, there is opposed the assertion that life deals chiefly with material objects, concrete things, and physical conditions, and that the demands that these make upon education are imperative. (2.) The movements most prominent in elementary and in higher education are equally divergent. The former is seeking to introduce the learner to a wider range of knowledge and to gain greater breadth, while the latter is making its marked advance in the direction of specialization. It is hardly credible that any one of these various aspects has a monopoly of the truth or alone produces results that are desirable.

In view of these facts it may not be unprofitable to inquire with some care what is the relative value of breadth of knowledge and depth of knowledge, and to consider the question in its relation to the four phases just enumerated, and to the fostering of productive power joined with personal growth.

Let us first approach the subject by aid of a concrete case, and consider certain sources of strength and of weakness in the traditional college courses before the era of electives. An authority has declared that these courses attained results out of all proportion to the quality of instruction they afforded. Yet no

college that secures an income large enough to do otherwise, retains the old curriculum. The results attained must have had a cause, even if it was not the quality of the instruction. The inability to resist radical innovation must also have a cause, possibly inherent in the system. Our fathers studied subjects enough to make them liberally educated even by President Gilman's standard: English, science, language, classic literature, history, and philosophy were all "required." So far as extension went, the courses left little to be desired, for in their day they included about all the subjects considered important.

There are two types of mind upon which the effects of these numerous studies are noteworthy. To a mind that is narrow in its range, methodical in its action, not given to hasty generalization, that proceeds by preference along the line of inductive development, the old courses rendered small assistance. The four years left chiefly a memory of many isolated subjects, mostly useless to the mature man for the simple reason that he had not the power to give them coherence. He was taken rapidly over many things, when his mind was in need of going slowly and deeply into a few things that it might gain in penetration, in constructive power, and in scope, without which extension is only superficial. Such a mind is the typical scientific one, that examines, investigates, and grows into breadth through patient perseverance. Men thus gifted have done most of the practical work in the everyday world and in the domain of material progress. They are also the most influential opponents of the old time college courses, for these have had little power to help them.

The second type is the mind quick to see relations between things apparently diverse, that has preference for the abstract over the concrete, that delights in generalization, and reasons by deduction. We might call it the clerical mind, were it less virile, or the judicial mind, if it had more caution and balance. Men thus endowed have an instinct for organization of thought. To them the many subjects were but varied phases of one greater subject, such as the reign of law, the development of the race, or the *crescendo* of progress. They had by birthright an aptitude for one form of intensive analysis. Upon this they spitted the college subjects term after term and held them fast. Some subjects were better for being thus transfixed, and others had their vitality punctured out of them. These men were brilliant in college, useful in the pulpit and on the platform, often successful in law and business. They now form the majority of the distinguished alumni of most colleges.

Thus it has become evident that the same course, under the same professors, was often to a part of a class chiefly extensive, and to others chiefly intensive; that those who pursued the course intensively more often gained the prizes of life; and that so far as the conscious purpose of the college was concerned, no effort was made to adapt instruction to the special need of either class of minds. The strength of the curriculum is inferred from the success of the men trained by it; its weakness and decline may be traced to the fact that it had nothing adequate to give men equally able, but whose ability was not sufficient to wrest bread from what to them were stones.

"The power of effort, psychologists now agree, is probably the highest and most educable part of man."[1] This power is dependent upon the will. The action of the will is largely controlled by interest. That interests us which brings us nearer to our ideal. The scope and elevation of an ideal are dependent upon apperception.

At first thought apperception seems concerned chiefly with extension. It suggests the growth of mind in breadth and in range. Its exercise involves the wider use of data and the assimilation of new knowledge. But "apperception organizes the world of knowledge by bringing the self to bear upon it. It is the reaction of mind upon the material presented to it."[2] This reaction is primarily analytic: it attempts to distinguish the accidental from the essential. Its first queries are intensive, and it is only when these are met that the new knowledge is assimilated and that growth in extension is possible.

The ideal which the mind holds before itself is the creation of the will. An essential quality of the ideal is dissimilarity to the actual. The intensive reaction of the mind upon the actual, in the act of apperception, detects the limitations of the specific and the concrete. By a creative synthesis the ideal is shaped, freed from limitation, and made vital. In aesthetics and in morals this act may often approach intuition; when this is the case, the ideal becomes almost absolute. Its maturity is coincident with its origin; it springs forth full grown like Athene from the head of Zeus. It suffers little

[1] Pedagogical Seminary, Vol. I, p. 322.
[2] Dewey Psychology, p. 85.

change from the later experience of life and the widening range of knowledge. In the terminology of our theme, such an ideal has in its province exhausted the content of intension, and it remains for extension to supply the varying forms in which that content may be found. The ideals that denominate the intellectual and active life are generally of slower growth than those of aesthetics and morals. They are more subject to modification and are apparently more dependent upon the extensive resources of their possessor. But when we have noted that in the one the mind often has the power to grasp the whole intensive content without the aid of the slower analytic process, and that in the other the mind more often has to come gradually to a knowledge of the truth, we have not discovered any essential difference in the formation of the two classes of ideals, other than that of rate of growth. Both are essentially intensive in formation and in application. Both are by virtue of their intensive truth greater than the actual, however nearly universal its extension. Neither can exist without the actual—which both use, the one as corroborative, the other as stimulative to growth.

The name interest is given to that state which arises when the mind discovers that any object can bring it nearer its ideal. Interest is never isolated; it is always complex. Primary interests are controlled by the intensive power of the ideal. There are also secondary interests of many degrees of force; these are intricate and often obscure in their connection. The relative influence of primary and secondary interests in different minds is as varied as is individuality. Characters

with pronounced primary interests and a wide range of well ordered secondary interests, are best equipped for action and for growth. The marked primary motives insure productive power, and the breadth of sympathy tends to develop symmetry and stability. Herbart's "many-sided interest" is only another name for this unification of the self through contact with the world at many points.

Some men pose as specialists because they have few secondary interests. Their one talent is prominent because it stands out in solitary relief like a single tree on a barren hill-top, while a man of culture may possess whole forests of such trees, amid which the giant oaks escape the eye of the casual observer. The extreme development in one direction makes the monomaniac, in the other, the dilettante. It is the function of education to develop ideals and interests strong enough to dominate life, and at the same time to make productive the otherwise barren waste surrounding life's central citadel. In Aristotle's words, to enable men "not only to engage in business rightly, but also to spend their leisure nobly."

While it is evident that the greatest dimension of the primary interests of life is depth, and that the best secondary interests are such as are linked to their superiors by bonds of intension, it is also evident that a certain breadth of interest—of extension—is essential to intellectual and moral equilibrium.

We now come to the will, which has only passive connection with the curiosity that makes it easy to acquire a superficial knowledge of many things, or with the versatility that does several things indiffer-

ently well. The power of effort is an active manifestation of will. It requires in its higher phases well nigh exhaustive intension in the apperception, ideals, and interest, that support it. It implies concentration. It acts with the added momentum of its past—of habit. It is the most educable part of man because in it culminate and are made effective the results of the education of all other parts. If only the mind has a dominant purpose, it can organize and render tributary its remotest attainments, but without this central shaft it becomes the victim of the thought that widens but lames. All extension worthy of the name helps to perceive the relations of things. The great incentive to research—the watchword of the present—has come from the unexpected discovery of relations between things once thought not akin. Cross-fertilization is as frequent in the intellectual life as in nature. Other things being equal, the power of effort that is attended by large intelligence is not only superior in concentration and in perseverance, but is immeasurably surer of ultimate success. It has a keener sense for the relation of means to ends, it can draw its resources from a richer store, its hopes are less visionary, its aim may be higher but is none the less sure. The power of effort that characterizes liberal culture made coherent by an adequate intensive ideal, is indomitable.

In the discussion of the will we have found a more important use of extension than in any previous division of the subject. But in all the argument concerning the value of broad intelligence, there has been the implication that the mind finds an abiding source of strength and power only in those departments of

knowledge in which it has penetrated far enough below the surface to find a centre shared in common by other forms of knowledge; and the more numerous and varied the resources at one's disposal, the more nearly complete must be his intensive control over them if he would use them.

Mark Pattison once wrote,—"A man who has been trained to think upon one subject, or for one subject only, will never be a good judge in that one; whereas the enlargement of his circle gives him increased knowledge and power in a rapidly increasing ratio. So much do ideas act, not as solitary units, but by grouping and combination."[1]

President Hall, the most aggressive of all advocates of specialization, declares that "General culture is the best soil for any kind of culture to spring from, and power, though best applied at a small surface, is best developed over a large one," and then adds "but general culture is the symmetrical all-sided development of the individual. Strength lies in individualization."[2]

Let us now try to answer the queries raised at the outset. What is the educative need of those who hold the spiritualistic view of life? In words that one of their greatest thinkers might well have said of them, they "attempt to explain the facts and events in the world by referring them all to one first principle."[3] Extension can teach them how mighty a first principle reason demands to explain the universe, and that a universe that far exceeds our comprehension can be

[1] Oxford Essays, 1855.
[2] Pedagogical Seminary, Vol. I, p. 323.
[3] Harris. Hegel's Logic, p. 1.

explained only by a cause that in its entirety is still more transcendent. It can also teach them that the modes of operation of this cause are infinite in variety, and all illumine the nature of his dominion.

What is the need of those to whom life is essentially concerned with things concrete and physical? Without elaborating a proof, we may here assume that their attainments in extension are mostly superficial or they would have discovered for themselves that things material are subject to things not material, and that among things not material there are principals and subordinates, servants and masters. The greatest need of those whose horizon is shut in by the concrete and physical is to learn that these are not what they seem, that forces and laws are more enduring than their creatures, and that it is the unseen that is eternal. They need to learn in extension through intension. Rational science can help them, but not that scientific furor that declares that every boy should learn the structure of the locomotive that he may travel safely and rapidly, that he should study electricity that he may ride in the electric car and walk in the light of the electric lamp, and that he should study chemistry that he may be nourished by the bread he eats. The man who buys his ticket, pays his nickel, lives near his fellowmen, and has food to eat, gets about all the "practical" advantage that is to be had from these things, whether he can explain the principles of their action or not. The material forces of this world are so obedient to law, that a small number of men specially gifted are rapidly reducing them to such order that the average man when in need of their

assistance has only to press the button and they do the rest, whether he understands how or why, or not. But in the world of rights and wrongs, of beliefs and prejudices, of cant and demagogism, of human lives and souls, there are no patents, no buttons to press, but each has to choose his own course and to act for himself by aid of the best guidance within his reach. Bain says that "next to confusion there cannot be a greater evil than disproportion."[1] Disproportion here will cause confusion superlative.

We come now to the relation between extension and elementary education. Years ago it was a foregone conclusion that the traditional college course must yield because in vital points its extension was often too great for its intension. It has been superseded by a system of far greater breadth, but which makes possible an intension unattainable by the majority under the old regime. It recognizes the supremacy of the individual, believes that for each mind there is a unique curriculum better than any that can be required of all, and is fairly justified in its assumption that the student when freed from constraint will elect what he most needs and can best use. It is undoubtedly true that much of the force set free by relaxing the demand for many specific subjects has gone toward deepening the intensive grasp of those chosen. It is also true that the tendency to narrow specialization has not gone to the extreme predicted, and that although graduates may not have a smattering of as many things as they once did, they know more that for them is worth knowing.

[1] Education as a Science, p. 434.

But what has all this to do with elementary education? Much in many ways. The colleges have modified their explicit demand for varied work at the end of the freshman year only to require more evidence of it at the beginning. They are asking more of the academies and high schools—and rightly so. These in turn have to increase their demand upon the grammar schools.

There are four departments of extension in which the college has a right to require preparation from the fitting school, and the fitting school must in turn make the same demand—but with less intension—of the lower school. These four demands are (1) for the power to deal with mathematical thought—with quantity, symbols, and methods of proof; (2) for the power to deal with forms of expression (a) synthetically, in the form of accurate expression of thought in language, (b) analytically, in the form of grammatical and rhetorical classification, and (c) interpretatively, in the ability to understand and appreciate and to make others understand and appreciate what has been expressed in one language or in more; (3) for the power to perceive and to interpret phenomena: this is not simply to look at them as curiosities, but to apperceive them; and (4) for a power that may be called that of selective acquisition, of constructive learning, of using books, objects, apparatus—everything—intelligently. This latter power is important enough to demand separate enumeration. It is intensive, and all school work should aid its development.

The college cannot get the best results from the present system until it can assume the possession of

this four-fold power, with good intension, on the part of its entering class. The fitting school can not meet this requirement in its spirit until the lower schools respond. The demand that each makes of its subordinate is necessary. The grammar school needs greater extension for its own sake, in order to create more centres of interest, to make appeal to the whole mental life of the child, to make possible a unification of its work. This consolidation must take place in the whole-souled interest of child life, for intension can not yet go deep enough to make the parts cohere through their own relations. When the grammar pupils can deal with mathematical thought, with expression in its three phases, with phenomena, and with the common sources of knowledge, the higher schools can give depth to much that is now without it, and can at the same time enlarge their scope.

The reply to the last query has in substance already been given. In every instance in which specialization is more than a new name for limited capacity, progress in investigation and discovery leads to extension. The university and professional school assume a foundation of general culture as preparatory to their work. That colleges have made it possible for this general culture to bear the imprint of individuality, makes it none the less broad. When the post-graduate specialty has crowned the apex of the pyramid, we ask not its comparative dimensions, for it is symmetrical, stable, and without defect. The man is greater than his calling, but without a vocation he would be incomplete.

Finally, though their relative importance varies at

different stages in education, and though each has a special value in the attainment of certain ends, extension and intension cannot be separated, and the full potence and effect of each is requisite for symmetry. We shall never outgrow that part of the Greek ideal, and Plato gave the final definition when he declared that the man of culture is one who is "a lover not of a part of wisdom, but of the whole; who has a taste for every sort of knowledge, and is curious to learn and is never satisfied; who has magnificence of mind and is the spectator of all time and all existence; who is harmoniously constituted; of well proportioned and gracious mind, and whose nature moves spontaneously toward the true being of everything,"

DISCUSSION.

Prof. SIMON N. PATTEN, of the University of Pennsylvania opened the discussion of Mr. Douglas's paper.

The speaker began by calling attention to the difficulties of correctly apprehending the meaning of psychological discussion. These difficulties were, however, more apparent than real, as they lie in the meaning of the terms used. Each science has a limited number of technical terms which must be thoroughly mastered before progress in it is possible. If the student is not held back by these initial difficulties, the subsequent effort is not much greater than those needed to understand current problems of interest.

The speaker then sought to illustrate the idea of extension and intension from the present social problems. He used the doctrines of the advocates of the single tax and of paper money to show the force of

intensive ideas. Whatever opinion may be held of the truth of those doctrines, there can be no doubt but that they cause those who believe in them to create higher ideals and to explain all social problems, especially all social evils, through a few leading principles upon which these theories are based. There is intensive thought wherever a few principles bind a mass of isolated facts into a unit and create in the thinker an interest in them. In the school-room the teacher should recognize the vitality and importance of intensive ideas. They create the bonds needed to unite isolated facts which the child has observed. The teacher cannot be successful unless he discovers the complementary groups into which familiar facts will unite, and helps the child to shorten the time otherwise needed for arranging these facts in the groups most effective for their apprehension.